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Report No. 2

PROSPECTIVE RATE SETTING INFORMATION SYSTEM DESIGN

VOLUME 1: REQUIREMENTS

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PROSPECTIVE RATE SETTING INFORMATION SYSTEM DESIGN

VOLUME 1: REQUIREMENTS

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This report was prepared under a contract between the Social Security Administration, HEW and the MITRE Corporation. The views and opinions expressed in the report are the contractor's and no endorsement by the Social Security Administration or HEW is intended or should be inferred. The project officer for this contract was William L. Damrosch, a staff member within the Division of Health Insurance Statistics, Office of Research and Statistics.

Under the HEW reorganization announced March 8, 1977, the Division of Health Insurance Studies has been transferred to the Health Care Financing Administration.

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ABSTRACT

Because health care costs represent an increasingly large proportion of national expenditures, new approaches to cost control and rate setting are receiving much attention. Under a contract with the Social Security Administration, Office of Research and Statistics, MITRE is designing and validating a Prospective Rate Setting Information System (PRSIS). The system, directed primarily toward national health insurance, is intended to assist rate setting for institutional health care providers such as hospitals and nursing homes. This document, Volume I of the project report, defines the PRSIS, describes the participant organizations, the functions to be supported, the informational content of the system and other performance requirements.

PREFACE

This document is Volume I in a five-volume report being prepared by The MITRE Corporation for the Social Security Administration - Office of Research and Statistics, as part of a project entitled: "Prospective Rate Setting Information System (PRSIS) Design". The work, which is being carried out on SSA Contract Number 600-75-0181, is concerned with Prospective Rate Setting for institutional providers of health care, such as hospitals and nursing homes, particularly in a future national health insurance environment.

Volume I contains detailed background information on participants in rate setting and allied activities -- institutional providers of health care, third party payors, and Federal and State regulatory agencies. It discusses the relevant functions that these participants carry out, and selected financial aspects of their operations. It also establishes the requirements of the PRSIS in terms of data handled, performance characteristics and other factors.

It must be recognized that many aspects of the environment in which the PRSIS would be implemented are indeterminate at this time. Although this Volume attempts to address all elements of a complete requirements statement, some elements are of necessity described only illustratively or in terms of multiple alternatives.

The lack of complete specificity, deriving from the range of possible system environments, combined with the potential benefits of exploring alternative or innovative system design concepts, lead to a family of environmental scenarios and system options which will be characterized in Volume II.

Volume II of the report will explore the opportunities for innovation in the realization of a PRSIS meeting the requirements defined in Volume I. It will identify a family of system options and the major issues involved in making option selections and detailed design decisions. The set of system options, after suitable review in discussions and workshops for concept validation, to be documented in Volume III, and cost-benefit and trade-off analyses, to be covered in Volume IV, will be narrowed down to specific recommendations and suggestions for system implementation in Volume V. During the PRSIS design process, some modification to the PRSIS requirements may be found necessary; if so, these will be documented in Volume V.

The MITRE project members are grateful to senior personnel in hospitals and nursing homes, hospital associations, rate setting agencies, health planning agencies, and governmental and private third party payors, for the information that they provided to the project, both through verbal discussions and copies of reports and memoranda. Information was also obtained in seminars and workshops.

PREFACE (continued)

The guidance provided by William L. Damrosch, Project Officer, and by James M. Kaple and Melvin L. Gent, all of SSA, was important in shaping the work. In addition, much helpful information was obtained from Katherine G. Bauer of Harvard University, which is also an SSA contractor.

At MITRE, Edward R. Green and his associates provided information on health insurance plans and practices, and Elsie L. Fitt established and structured the project data base of reports, books and periodicals. Marjorie E. Hayford typed the several drafts of the report, and the final copy.

Volume I was reviewed by DHEW agencies during the period November 1975 to June 1976, and is herewith published in final form.

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1. SYSTEM REQUIREMENTS DEFINITION

1.1 Scope and Purpose of Requirements Document

This document establishes the requirements that the Prospective Rate Setting Information System (PRSIS) will have to meet. Chapter 1 defines the PRSIS in terms of general purpose, focus, rationale, and scope. Chapter 2 outlines the relevant characteristics of the organizations that are expected to participate directly in the PRSIS or to interface with it. Chapter 3 describes rate setting and other allied functions that the PRSIS will be designed to support. Chapter 4 details PRSIS objectives and defines, both qualitatively and quantitatively, the informational content of the system and its data inputs, files, transmissions, processings and outputs. Finally, Chapter 5 establishes other system requirements, such as performance factors, degrees of security control, cost constraints, and properties to ease system implementation.

It should be noted that Chapters 2 and 3 provide background material for the subsequent discussion of the information system. The reader who is familiar with the field of prospective rate setting, and the administrative and financial processes associated with institutional health care, may wish to scan quickly through Chapters 2 and 3, and then turn to the characterization of PRSIS data in Chapter 4.

It must be recognized that many aspects of the environment in which the PRSIS would be implemented are indeterminate at this time. Although this Volume attempts to address all elements of a complete requirements statement, some elements are of necessity described only illustratively or in terms of multiple alternatives.

1.2 Focus of Prospective Rate Setting Information System

The Prospective Rate Setting Information System (PRSIS) is intended to facilitate and support the function of rate setting for a major class of providers of health care. The class of providers here considered includes institutions such as hospitals, nursing homes, neighborhood clinics, home health agencies, outpatient physical therapy services, and health maintenance organizations; it excludes other types of providers such as personal providers (e.g., physicians and dentists), and providers of other services and supplies (e.g., druggists, suppliers of eyeglasses, hearing aids and other appliances, and ambulance services). The PRSIS is also intended to assist functions allied to rate setting such as health care planning and review of proposed capital expenditures.

The PRSIS is directed primarily toward assisting the rate setting function in the future health care funding and reimbursement environment that would result from the enactment of National Health Insurance (NHI). It is also intended, however, to be useful prior to NHI establishment.

1.3 Present Bulk Purchasers of Health Care and Proposals for National Health Insurance

The money to pay for health service comes partly from direct payment by the consumer, but over two-thirds of the payments come through other channels, chiefly private or public insurance carriers, and public assistance programs. These channels are bulk purchasers of, or contractors for, medical care and are commonly known as third party payors. Some of the principal bulk purchasers are:

- Private Insurance Carriers
  Blue Cross and Blue Shield
  Commercial Carriers
  Health Maintenance Organizations (HMOs)
  (Chiefly for employed persons and their families)

- Public Insurance Carriers
  - Medicare (for the aged and disabled)
  - CHAMPUS (for families of and retirees from the uniformed services)
  - (For special categories of consumers)
- Public Assistance Programs
  - Medicaid (for general care)
  - Maternal & Child Health and Crippled Children
  - (For medically indigent persons)

The many administrative and financial activities that are associated with the operation of insurance plans and public assistance programs are carried out in part by the parent plan or program organization itself, and in part by designated agents or intermediaries. Functions of both parents and intermediaries are of concern here.

It is expected that legislation for NHI will be enacted in the United States, although the year of enactment, the form of insurance, and the extent of coverage for different types of consumers and provider services, are all uncertain. Some 23 different bills were submitted for consideration by the 93rd Congress; a few of these, together with some new bills, have been introduced into the 94th Congress. National Health Insurance would change the channeling of payments and the pattern of bulk purchasing. It could supplement present forms of bulk purchasing, or might consolidate or replace most or all present forms.

At the present time, most setting of rates charged by health care institutions is done by state agencies or commissions, and/or by bulk purchasers such as Blue Cross. Until laws are passed establishing NHI, it is not clear what type of organization or organizations will then be assigned the responsibility for rate setting and other necessary administrative and regulatory functions. Whatever form of NHI is established, however, an effective means of rate setting will be required.

1.4 Prospective Rate Setting and Allied Functions

Prospective Rate Setting (PRS) is one of the mechanisms that can be used to help control provider costs, and govern the rates of reimbursement by bulk and other purchasers of health care. PRS is the formal establishment, by a suitably authorized agency or organization, of rates that are expected to be paid by some or all service purchasers, to service providers, for any services received during a defined future period (often the next provider budget year).*

To date there is some variation in stated objectives among those PRS operations already established: while all operations have similar overall goals of cost control, the focus of specific PRS efforts is variable. A reasonably representative and inclusive set of PRS objectives is shown in Table 1-I.

The 25-30 diverse PRS programs already introduced into various states or sub-state regions in the country have mostly been in operation for short periods. The programs differ considerably in the approaches taken, both as to the information required from providers and how it is analyzed and reviewed. For some programs, provider participation

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*In this paper, the phrase Prospective Rate Setting will imply authority to define or approve rates of reimbursement by purchasers, as well as rates charged by providers. The purchaser aspect is sometimes called prospective reimbursement. A more complete description of PRS is given in Section 3.2.1.

TABLE 1-I

ASSUMED OBJECTIVES FOR PRS

- Establish costs based on services; charges based on costs; equity among all payors.
- Furnish aids to improve management by providers, including particularly better cost control.
- Eliminate unnecessary service costs; limit rate of inflation in charges to the rate in the applicable portion of the general economy.
- Ensure that reimbursement is sufficient for a viable health care industry.
- And, at the same time, take into account applicable constraints on bulk purchaser payments.
- Make public disclosure of provider costs and charges.

is voluntary, for others, mandatory. Many programs are characterized as pilot or experimental programs. Evaluations of the effectiveness of these approaches are not yet conclusive. It appears, however, that PRS or some similar mechanism will be valuable in addressing rate problems in advance, and in giving providers added incentives to contain costs.

Improving the rate setting process is only one way of seeking to contain the cost of health care and reduce its financial burden on the consumer. Other approaches include state and sub-state area planning for health care facilities and services together with review and regulation of proposed capital expenditures and (expanded) services (CES), activities of Professional Standards Review Organizations (PSROs), and facilities inspection, licensing, accreditation and certification by governmental or private agencies.

Both rate setting and the other functions listed above are highly dependent on information system support for their success. This dependence will become evident in Chapter 3, which discusses the functions in some detail.

1.5 Definition of the PRSIS

The PRSIS discussed in this document is an information system supporting nation-wide the rate setting and allied functions for institutional providers and (presumably) all purchasers of health care. As such it could be established, for example, under Federal auspices as a large integrated national information system. Or it could be established as an aggregate of interacting, but semi-autonomous, subsystems at the state level, tied to a much smaller Federal system. Most of the system requirements, however, would be the same, irrespective of which approach was followed.

The functions supported, and the data inputs and data outputs of such a PRSIS are outlined below, and described in more detail in Chapter 4.

1.5.1 Functions Supported

The primary system applications, or functions to be assisted or supported by the information system, are the following:

- Prospective Rate Setting for institutional providers and bulk and other purchasers of health care.
- Monitoring provider service activities, charges and finances.
- Promulgating relevant Federal and state policies, standards and guidelines, and monitoring compliance.
- The coordination of PRS with state and area health planning, and with other health care regulatory functions.
- Analysis, research, evaluation and experimentation by governmental or private bodies, to the extent that PRSIS data can be released for these purposes.

In addition, the PRSIS may support other functions such as:

- Selected aspects, as appropriate, of non-PRS regulatory and planning activities, such as CES review and health care planning.
- Reimbursing providers for service rendered.
- Advancing funds to agents or intermediaries to enable them to reimburse providers.
- Checking the eligibility of consumers seeking care.

The exact scope of the PRSIS will be determined in subsequent studies to be documented in later reports.

1.5.2 Data Inputs

The data inputs required by these applications are:

- Provider reports, covering both projected and actual revenues, costs and activity (service utilization), and special information for rate submissions. Provider reports will constitute the primary data source.
- Provider data characterizing their facilities, capabilities and factors for classification.
- Statistical and financial data from bulk purchasers who are governed by the rate setting process.
- Federal and state policies, standards, guidelines and related data; professional classifications, standards, and other data concerning health care.
- Supporting data from state and area health planning, and from other medical care regulatory functions.
- Social and economic data needed for forecasting trends in demography, expected demand, prices and other external factors.

Depending upon the specific scope decided upon for the PRSIS, patient discharge data, provider billing data, agent or intermediary financial data, and enrollee status and eligibility data might also be required.

1.5.3 Data Outputs

The data outputs required from the information system, to be furnished as appropriate to providers, bulk purchasers, Federal and state agencies, and other interested parties are:

- Rate decisions or recommendations, with appropriate backup.
- Data used in or generated by the development and operation of the rate setting process, such as: provider classifications, decision criteria, and group means and variances.
- Aggregations and totals by area or state, of provider utilization, revenues, costs, and other related data.
- Depending upon the applicable disclosure laws, detailed provider report submissions might also be made available to concerned parties, including the public.

Other outputs that might be generated by the PRSIS are: patient and case statistics, provider reimbursement instruments, agent or carrier funding instruments, and responses to eligibility queries.

As appropriate, portions of the above information categories would routinely or upon request be made available to state and area planners, or to other regulatory bodies. Preferably, there should be established at each level in the administrative structure -- area, state, regional, national -- a common data base that could be utilized, with suitable access rules, by all appropriate planning and regulatory agencies.

An important category of system participant is the health care provider, who furnishes the bulk of the input data. The information system should provide feedback to providers on all releasable categories of data that might assist them in the planning, management and evaluation of their activities. In this way, they will share in the benefits of the system.

Access to PRSIS data will have to be governed by the applicable laws, statutes, regulations and guidelines respecting data privacy, confidentiality and security, as discussed subsequently in Chapter 5.

1.6 Considerations of PRSIS Implementation

The PRSIS is intended to assist the rate setting function for institutional providers of health care in a future NHI environment. It is not now known when NHI may be enacted, or what form it will take. This uncertainty implies a corresponding uncertainty in how PRS will in the long run be carried out, and by whom. Also it is not known what approach or approaches to PRS will emerge as most effective in meeting cost containment and other objectives. Because of these unknowns, PRSIS system designs will have to encompass a number of alternative NHI and PRS environments, including the possibility of no NHI.

After NHI is established, the control of program costs, and the accurate forecasting of service and cost levels, will probably be even more important than they are now -- in view of expected increases in coverage under NHI. To prevent possible cost problems after NHI is established, a suitable PRS mechanism should be developed, tested and made ready for introduction concurrently with, or preferably prior to, NHI implementation.

A test version of the PRSIS could be introduced into one or more selected geographical areas, such as individual states, which showed an interest in such an experiment. If the test proves successful, the further adoption of the PRSIS (perhaps modified due to test results) could proceed in several ways -- varying from gradual evolution of existing data systems toward the PRSIS design, to a complete phased replacement of all existing data systems.

An early test of the PRSIS concept would also be useful in providing inputs to final NHI legislation, or to subsequent regulations and guidelines.

2. PARTICIPANTS IN THE SYSTEM

Chapter 2 identifies and discusses the organizations (or institutions or agencies) that would be expected to participate in the Prospective Rate Setting Information System, either as major sources, processors or users of data, or in a more limited fashion. The entire set of participants that are in any way involved at this time in institutional health care and its regulation and financing is identified in Section 2.1. Section 2.2 covers relevant aspects of those existing organizations that are closely related to Prospective Rate Setting, and Section 2.3 discusses the possible forms of National Health Insurance, and their expected impacts on these present organizations.

The description in this Chapter of participant organizations provides a framework for the discussions of rate setting and allied functions in Chapter 3, and of data requirements in Chapter 4.

2.1 Definition of Total Organizational Domain

A list of the organizations that are associated directly or indirectly with rate setting for health care institutions, is given in Table 2-I. All of the listed organizations have some bearing on Prospective Rate Setting, but those that are starred in the table -- i.e., those organizations most closely connected with rate setting -- are described in Section 2.2.

The domain of organizations associated with institutional rate setting is indicated schematically in Figure 2-1. The vertical dimension in the figure is organizational level, extending from the individual enrollee or patient at the bottom to the national or Federal level at the top. The horizontal dimension shows rate

TABLE 2-I

LIST OF POTENTIAL PRSIS PARTICIPANTS

(Starred items are discussed in Subsection 2.2)

A. Federal Agencies/Offices (regional and national)
   Dept. of HEW: executive offices; SSA, PHS, SRS, advisory bodies
   Other Executive Departments
   Federal Courts
   Professional Standards Review Organization

B. State and Area Level Agencies/Offices
   *Rate Setting Agencies
   *Health Systems Agencies (being established)
   *Capital Expenditures and Service (CES) Review Agencies
   *Professional Standards Review Organization (PSRO) (at area and state level)
   State Health Departments, and advisory councils and commissions
   State and local courts

C. Providers
   1. Institutional Providers
      *Hospitals: General medical and surgical; Specialty (psychiatric, tuberculosis, general chronic, other[1])
      *Nursing Homes: Nursing care homes, personal care homes with nursing, personal care homes without nursing, domiciliary care homes
      *Health Maintenance Organizations
      Other Facilities[2]

   2. Non-institutional Providers

   3. Associations of Providers - area, state, national
      Hospital Consortia (area), Hospital Associations (state and national), American Nursing Home Association (ANHA), Medical Associations, Agencies or Boards for certification, accreditation, or approval

D. Bulk Purchasers of Service/Third Party Payors
   *Public Assistance Programs: Title V (Maternal and Child Health), Title XIX (Medicaid)

   *Insurance: Title XVIII (Medicare), Blue Cross, Blue Shield, Commercial Insurers, Health Maintenance Organizations (HMOs), Civilian Health and Medical Program of the Uniformed Services (CHAMPUS)

E. Intermediaries
   Intermediaries for government programs
   Employers performing intermediary roles

F. Patients Receiving Service
   Employed persons and dependents
   Indigent - non-aged needy and medically indigent
   Aged

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[1] Includes eye, ear, nose and throat, epileptic, alcoholism, narcotic, maternity, physical rehabilitation and other hospitals.

[2] Includes neighborhood clinics, home health agencies, facilities for alcoholic, the blind and/or deaf, drug abusers, emotionally disturbed, mentally retarded, physically handicapped, etc.

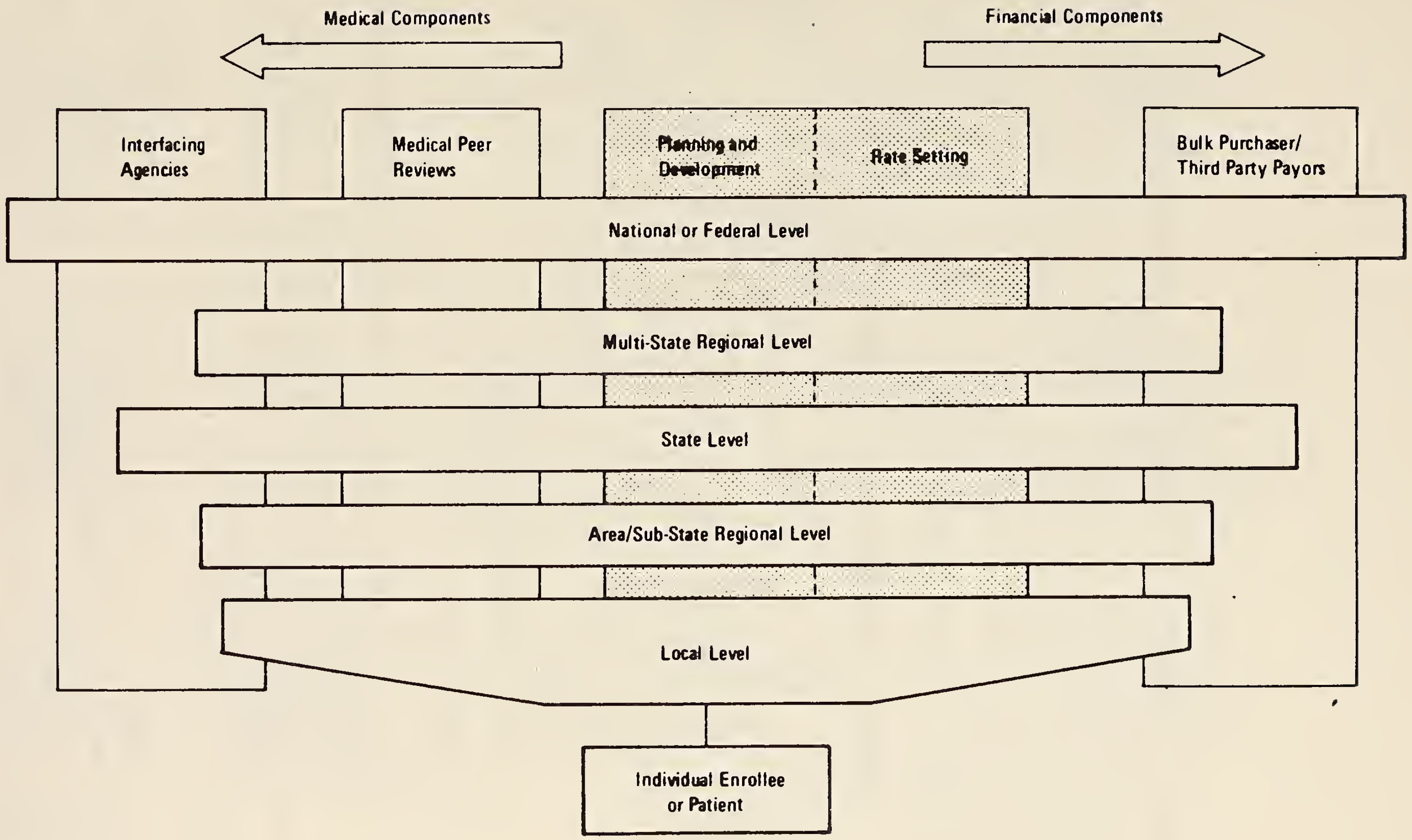

Medical Components
Financial Components
Interfacing Agencies
Medical Peer Reviews
Planning and Development
Rate Setting
Bulk Purchaser/ Third Party Payors
National or Federal Level
Multi-State Regional Level
State Level
Area/Sub-State Regional Level
Local Level
Individual Enrollee or Patient

Figure 2-1. Total Organization Domain

setting plus planning and development as the central focus, with financial components to the right, and medical peer review and various interfacing professional agencies to the left. Using Figure 2-1 as a framework, Figure 2-2 identifies all the types of present organizations (or agencies or institutions) that now make up the total system, and shows some of their key interactions.

2.2 Relevant Characteristics of Selected Organizations

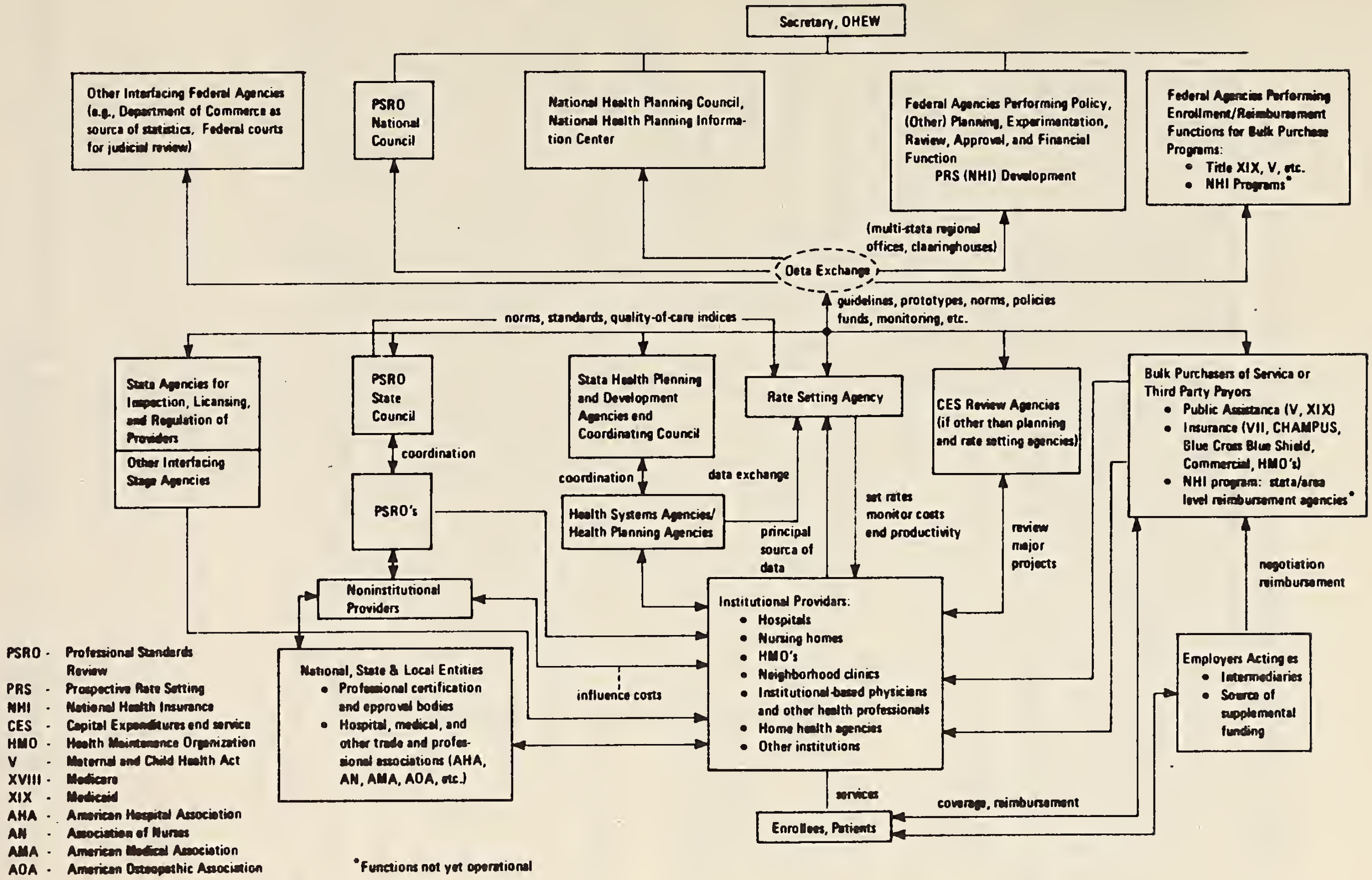
Each class of organization that is closely involved in, or related to, Prospective Rate Setting (the starred items in Table 2-I) is discussed below in terms of its basic purpose and role, its authorization, its significant subclasses and other factors. The organizations are grouped under three headings as follows:

1. Rate Setting and Associated Regulatory and Planning Agencies
2. Bulk Purchasers of Service
3. Organizations Providing Service

2.2.1 Rate Setting and Associated Regulatory and Planning Agencies

This category of organization includes, in addition to rate setting organizations, agencies performing capital expenditure and services (CES) review, state and area planning agencies, and Professional Standards Review Organizations (PSROs).

Other agencies performing regulatory functions, but not discussed here, are state agencies that carry out inspection and licensing of facilities and licensing of personnel, and provider based professional bodies that carry out accreditation, certification, and other review and approval functions.


Secretary, OHEW
Other Interfacing Federal Agencies (e.g., Department of Commerce as source of statistics, Federal courts for judicial review)
PSRO National Council
National Health Planning Council, National Health Planning Information Center
Federal Agencies Performing Policy, (Other) Planning, Experimentation, Review, Approval, and Financial Function
PRS (NHI) Development
Federal Agencies Performing Enrollment/Reimbursement Functions for Bulk Purchase Programs:
• Title XIX, V, etc.
• NHI Programs*
(multi-state regional offices, clearinghouses)
Data Exchange
guidelines, prototypes, norms, policies funds, monitoring, etc.
norms, standards, quality-of-care indices
State Agencies for Inspection, Licensing, and Regulation of Providers
Other Interfacing State Agencies
PSRO State Council
coordination
PSRO's
State Health Planning and Development Agencies and Coordinating Council
coordination
Health Systems Agencies/ Health Planning Agencies
data exchange
Rate Setting Agency
principal source of data
set rates monitor costs and productivity
CES Review Agencies (if other than planning and rate setting agencies)
review major projects
Bulk Purchasers of Service or Third Party Payors
• Public Assistance (V, XIX)
• Insurance (VII, CHAMPUS, Blue Cross Blue Shield, Commercial, HMO's)
• NHI program: state/area level reimbursement agencies*
negotiation reimbursement
Noninstitutional Providers
National, State & Local Entities
• Professional certification and approval bodies
• Hospital, medical, and other trade and professional associations (AHA, AN, AMA, AOA, etc.)
influence costs
Institutional Providers:
• Hospitals
• Nursing homes
• HMO's
• Neighborhood clinics
• Institutional-based physicians and other health professionals
• Home health agencies
• Other institutions
Employers Acting as
• Intermediaries
• Source of supplemental funding
services
Enrollees, Patients
coverage, reimbursement

PSRO - Professional Standards Review
PRS - Prospective Rate Setting
NHI - National Health Insurance
CES - Capital Expenditures and service
HMO - Health Maintenance Organization
V - Maternal and Child Health Act
XVIII - Medicare
XIX - Medicaid
AHA - American Hospital Association
AN - Association of Nurses
AMA - American Medical Association
AOA - American Osteopathic Association

*Functions not yet operational

Figure 2-2. Spectrum of Potential Participants and Their Major Roles in a Prospective Rate Setting Information System

2.2.1.1 Rate Setters

A rate setting agency is a body established or delegated the authority to determine and monitor the method and form according to which designated providers or classes of providers are reimbursed for incurred expenses (services rendered) by third party payors under specified bulk purchasing programs. Rate setting or reimbursement is prospective, according to Lewin[*], provided: 1) the provider alone does not set the rates, 2) predetermined targets for costs and revenues are based in part on projection of future costs and utilization, 3) the provider is at risk for a portion of costs exceeding projected levels and benefits when costs fall below the estimated levels, and 4) retrospective adjustments can be made only to prespecified factors and ranges, e.g., there is no complete end-of-year settlement between providers and bulk purchasers.

Authority for PRS can be vested in a state agency or commission (existing or newly established for this purpose), a Blue Cross Plan, or a voluntary association. Since Medicare reimbursement by law and DHEW policy is basically retrospective, a waiver is required for PRS. More than one rate setting agency can operate in a state, and all bulk purchasers need not be covered even by all these agencies combined; there is widespread agreement, however, that the most desirable system would be characterized by a single such agency setting rates for all bulk purchasers and for patients paying directly.

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[*] Lewin & Associates, Inc., Nationwide Survey of State Health Regulations (Washington, D.C.: 1974), p. 77.

A typical organization for rate setting might include a Commission of 5 to 10 members (high level medical and institutional representatives along with individuals representing other interests including the general public) to make final decisions; plus a staff of administrative, legal, accounting/analytical, data processing and clerical personnel. The number of institutions that one rate analyst can handle varies markedly with different types of PRS systems; other important variables are the mix of institutions, and the degree of (automated) screening of provider rate applications prior to any detailed analysis or budget examination.

Typical sources of funds are state general revenues, federal grants and matching funds, and special state funds. It is also possible, as in some Blue Cross Review systems, for at least part of the administrative expense for rate review to come from the billing/reimbursement cycle itself -- i.e., to be reflected in the rates. Major categories of expense include salaries and fringe benefits, data processing equipment and/or rental of services, legal and public hearings costs beyond staff salaries, materials and supplies, general overhead, and consultants; payroll is generally the largest single item. Agency annual budgets are reported to be on the order of $0.1 - 0.5 million for smaller operations (in terms of numbers of covered institutions), and $0.5 - 2 million for larger operations. These numbers are typical, in some sense, of current activities but should not be construed as implying fully stabilized or cost-effective levels of operation.

There are currently at least 26 PRS systems in 22 states covering about 25 percent of the nation's hospitals and one-third of the population.* Of these systems, 22 cover Blue Cross reimbursement, 10 cover private insurance and self-pay, 5 cover Medicaid, and 2 cover other state programs; only one system (in Maryland) covers all four categories of purchasers. The PRS system is both statewide and mandatory relative to provider participation in only 15 of the systems. Agencies currently performing rate setting are state organizations in 8 states, Blue Cross in 16, and voluntary associations in 2. PRS systems are being planned for in at least an additional 6 states.

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*Ibid.,p. 28.

2.2.1.2 CES Review Agencies

Capital Expenditures and Service (CES) Reviews are concerned with provider proposals for making major facility changes or improvements, for changing number of beds, or for making major changes in services. CES Reviews are carried out by state and area planning agencies, state health agencies and departments, and/or bulk purchasers depending on the type of funding or reimbursement program involved. Some form of CES Review occurs in nearly every state and the District of Columbia, with the general purpose of evaluating the need for specific additions to or changes in services, physical plant, or equipment involving large (commonly greater than $100,000) amounts of money.

Types of CES Review are: 1) state determinations of need in which providers obtain prior approval for major projects by applying for certificates of need (C/Ns) ; 2) review by a "Designated Planning Agency" (DPA) under Section 1122 of the Social Security Act for determining reimbursement of major projects through Medicare, Medicaid, and Maternity and Child Health Services; 3) voluntary interactions between providers and state/area health planning agencies, and in particular (from now on) with Health Systems Agencies (HSAs) established by P.L. 93-641; 4) reviews carried out by some Blue Cross

Plans to determine reimbursement for major CES projects (similar to 1122 Reviews); and 5) reviews made by state agencies under state construction finance programs, which exist in 42 states.

There are 9 states with C/N but not 1122 Reviews, 15 with C/N and 1122 Review, 22 with 1122 Review but not C/N, 19 with Blue Cross reviews in addition to C/N, and 4 with voluntary CES review.* The HSA involvement in CES reviews is still in the formative stages, so pertinent statistics in this regard are lacking. For C/N states the issuing agency is the State Department of (Public) Health or Human Resources in 12 states, the State Health Council or Commission in 7, and the former Comprehensive Health Planning (CHP) agencies -- "b" agencies not being replaced by HSAs -- in 5.

Key variables characterizing CES review are 1) types of facilities covered; 2) types of changes covered, e.g., changes in facility, equipment, number of beds, or types of services; 3) thresholds for review, commonly set at $100,000 for capital projects; 4) sanctions such as loss of license to operate (C/N), denial of construction permit (C/N), and reduced funding/reimbursement (1122 Review and Blue Cross review); and 5) type of administering agency.

In 19 of the 24* states with C/N, facilities covered are hospitals, nursing facilities, and other facilities; 3 such states cover hospitals and nursing homes, 1 covers hospitals only, and 1 covers nursing facilities only. For C/N and 1122 Review in general, changes covered most commonly include changes in facilities, equipment, and services, or simply changes in facilities and services.**

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*A partial updating provided by the DHEW Bureau of Health Planning and Resources Development is that as of September 30, 1975, there were 10 states with C/N but not 1122 Review, 19 with C/N and 1122 Review, 20 with 1122 Review but not C/N, and 2 trust territories with 1122 but not C/N; thus 29 states had C/N.

**For more detailed statistics on CES, see Lewin & Associates, Inc. Nationwide Survey of State Health Regulations (Washington, D.C: 1974).

2.2.1.3 State/Area Planning Agencies

A new structure for health planning is established by the National Health Planning and Resources Development Act of 1974, Public Law 93-641, which "amends the Public Health Service Act to assure the development of a national health policy and of effective state and area health planning and resources development programs." The legislation provides for the establishment of health service areas, health systems agencies for these areas, state health planning and development agencies, statewide health coordinating councils, and centers for health planning. In addition, the legislation provides for rate regulation grants to state agencies, and for Federal technical assistance to such agencies.

Portions of the technical assistance relate directly to some of the elements of PRS, such as 1) standards for uniform budgeting and accounting for hospitals, including specific cost centers and -- varying according to the type (or size) of institution -- a uniform rate setting method based on all-inclusive rates, 2) a system for classifying institutional providers, for example by types of services offered and number of beds, and 3) a uniform reporting system for institutional providers. However, the legislation does not explicitly state that any such uniform systems and methods must be adopted by any state. Uniformity even on an intra-state basis may continue to be the exception rather than the rule for years to come, barring further "inspiration" either from the rate setting agencies at the state level, or from future passage of National Health Insurance legislation.

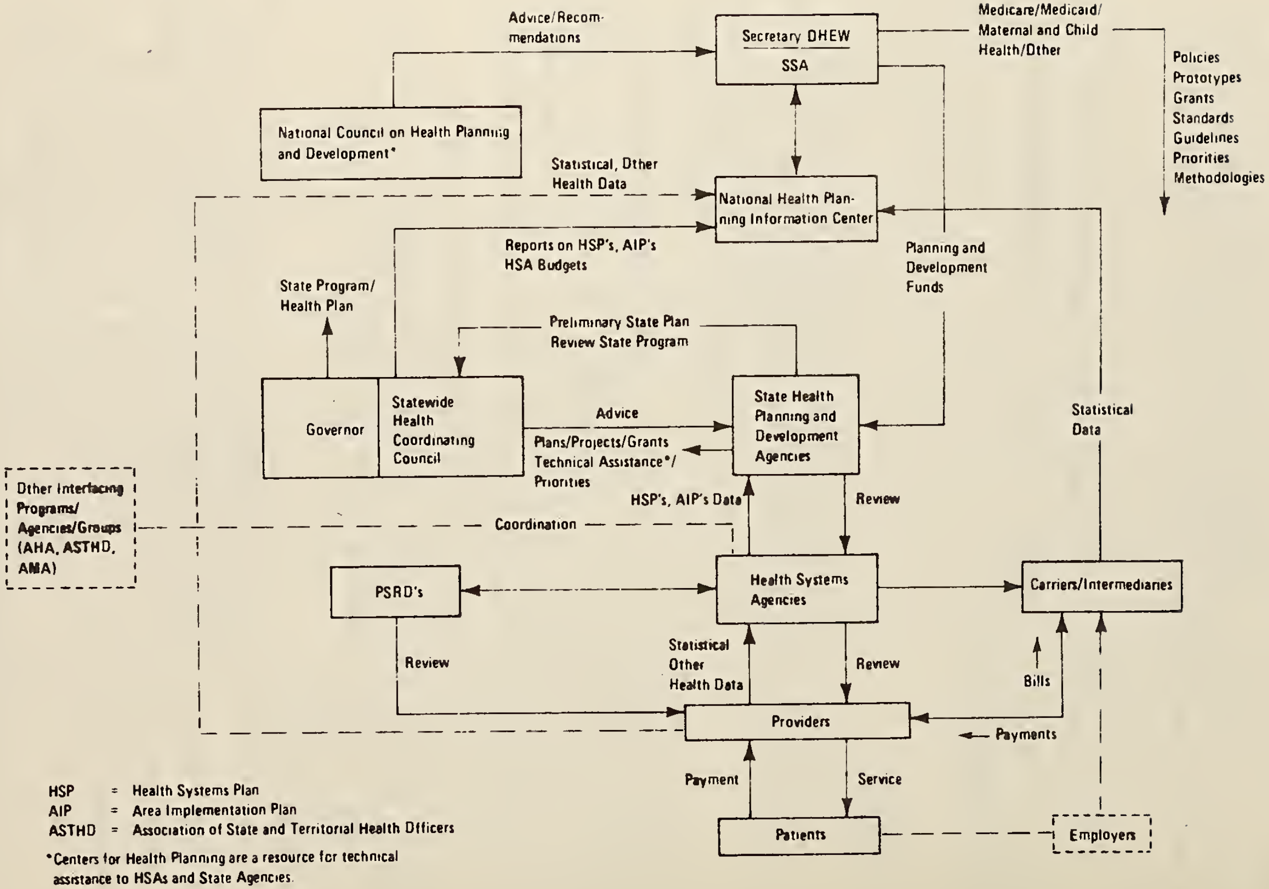
Policies, guidelines, and related aspects of health planning influencing the actions of the state and area agencies are promulgated by the Secretary of DHEW based in part on advice from the National Council on Health Planning and Development, also established by P. L. 93-641. The National Health Planning Information Center has been created and is a national clearinghouse for planning methods and information both received from and used by the health systems agencies, among others.

The large range of organizations involved in health care planning is indicated in Figure 2-3, which shows participants and channels of communication.

2.2.1.4 PSROs

Professional Standards Review Organizations (PSROs) are non-profit voluntary associations comprised largely, but not necessarily exclusively, of physicians. They were established in part by the Bennett Amendment of 1972 (P.L. 92-603) to monitor the quality and appropriateness of medical care and services under Medicare and Medicaid within prescribed (generally sub-state) geographical areas. In most areas of the country, PSROs either are just being organized, or have been functioning only a short time, perhaps on a limited basis. A fairly detailed discussion of PSROs can be found in Lewin; appropriate aspects are restated here and in Section 3 because of the critical importance of quality of care review to cost containment and PRS.

State Councils will be formed in states with 3 or more PSROs, with members appointed by the Secretary of DHEW and including representatives designated by the PSROs (one each), the state medical society (two physicians) and the state hospital association (two physicians) and the governor (two public representatives), plus two additional public representatives. In addition, in each state an Advisory Group will be established with seven to eleven members to represent the nonphysical health care practitioners and provider



HSP = Health Systems Plan
AIP = Area Implementation Plan
ASTHO = Association of State and Territorial Health Officers

*Centers for Health Planning are a resource for technical assistance to HSAs and State Agencies.

Figure 2-3. National Health Planning: Participants and Channels of Communication

institutions. A National PSRO Council of eleven physicians is appointed by the Secretary for three-year renewable terms, based upon recommendations primarily (a majority) by national physicians' organizations, but also by consumer and other health care interest groups.

Funding for the establishment and operation of PSROs, State Councils, Advisory Groups, and the National Council is available through the Hospital Insurance Trust Fund, the Supplementary Medical Trust Fund, and other funds coming under the Social Security Act.

2.2.2 Bulk Purchasers of Service

The characteristics of the present bulk purchaser plans are important not only because of their direct impact on rate setting, but also because they are prototypes for some of the possible forms of National Health Insurance.

Over two-thirds of health service payments are channeled through bulk purchasers (or third party payors), either as insurance or as public assistance. More than 90 percent of the population ineligible for public plans has some form of private health insurance. These health insurance plans can be of many varieties. Blue Cross/Blue Shield plans and commercial insurance companies purchase services for individuals and groups, the latter generally through employers. A unique form of private health insurance is provided by Health Maintenance Organizations (HMOs), which act both as purchasers and providers. Public insurance examples are Medicare, for the aged, and CHAMPUS for military families. Unlike insurance plans, in which premiums are levied to support subsequent service payments, public assistance utilizes tax dollars to purchase services for categorically and medically needy persons. Two examples are Medicaid and Maternity and Child Health.

2.2.2.1 Brief Description of Purchasers

The following is a brief description of the seven purchaser plans that were identified above. These plans are summarized in Table 2-II.

a. Medicare

The Medicare program, established as Title XVIII by the Social Security Amendments of 1965, is a federally-financed national health insurance program for people aged 65 and over and eligible under Social Security, railroad retirement, or other special designations, and for those disabled persons who have received social security disability payments. Program policy, planning, and funding are federal responsibilities. The program is administered by the Social Security Administration, either directly through the Division of Direct Disbursement of the Bureau of Health Insurance, or indirectly through selected agents. The program has two distinct plans with separate enrollment, funding, benefit structures and administrative channels. Part A, the hospital insurance, is largely administered by 82 provider-nominated "intermediaries" and financed mainly through employers' contributions under the Federal Social Security and railroad retirement systems. Part B, the supplementary medical insurance is largely administered by 48 SSA-selected "carriers" and financed by voluntary premiums which are matched by Federal contributions. There are, however, various exceptions to these administrative patterns for special categories of providers or services. The responsibility for determining rates is delegated to the intermediaries and carriers.

TABLE 2-II

COMPARISON OF SEVEN MEDICAL SERVICE PURCHASE PLANS

					Other Major Roles		
Program	Origins	Target Clients	Type of Program	Funding Source	Federal	State[1]	Private
Title V	1963 Federal Legislation	Medically Indigent and Poor Mothers, Children	Federal Medical Assistance Via States	Federal Funds[4] St/Loc Matching[2]	Review Guidance	Planning Operations Management Rate Setting	
Title XIX	1965 Federal Legislation	Medically Indigent, Poor	Federal Medical Assistance Via States	Federal, State Funds[4]	Review Guidance	Planning Operations Management Rate Setting	Possibly Fiscal Intermediaries
Title XVIII	1965 Federal Legislation	Aged, Disabled	Federal Medical Insurance	Salary Deduction (A)[3] Premiums (B) Federal Funds	Planning Operations Management	Inspection Certification of Facilities	Fiscal Intermediaries: Rate Setting, Administration
Blue Cross Blue Shield	Charter	Groups (Employment) Individuals	Not-for-Profit Medical Insurance	Premiums	Indirect Roles	Regulation Licensing	Employer: Funding Administration
Commercial Insurance	Corporate Charter	Groups (Employment) Individuals	Commercial Medical Insurance	Premiums	Indirect Roles	Regulation Licensing	Employer: Funding Administration
HMO's	Charters	Groups (Employment) Individuals	Prepaid Medical Services	Premiums	Supportive Legislation Guidance	Regulation Licensing	Employer: Funding Administration Intermediaries: Underwriting, Administration
CHAMPUS	Federal Legislation	Military Families and Retirees	Federal Medical Insurance	Congressional Appropriations	Planning Operations Management	Inspection Certification	Intermediaries: Administration, Rate Setting

[1] States may perform other inspecting functions, including rate setting.

[2] Match need not be in form of cash.

[3] Individuals with no social security deduction history can join and pay premium directly.

[4] Chiefly taxes.

b. Medicaid

The Medicaid program, or Title XIX, also initiated by the Social Security Amendments of 1965, is a program of medical assistance to the categorically needy qualifying for help under certain federally-aided programs and to the medically needy who are ineligible under the above, but are believed incapable of paying their medical bills. Federal policy characterizes Medicaid, but, unlike Medicare, the planning, rate-setting, and operation are at the state level. Funding is done through federal, state, and sometimes local taxes with the Federal share varying between 50% and 83%. In addition to meeting Federally-specified minimum requirements, each state program varies in terms of eligibility, benefit structures, and procedures. States themselves may carry out all administrative functions, or may select "intermediaries" to handle detailed transactions.

c. Maternal and Child Health Program

The Maternal and Child Health Program was authorized by Congress in 1963 as Title V of the Social Security Act. It is a form of public assistance designed to provide comprehensive health services to mothers and children, living in low income areas, and who are unable otherwise to obtain such services. States submit annual plans for Federal approval. Federal funding to the states must be matched by state/local dollars or effort. Supported hospitals and clinics provide services to all eligible mothers and children in their designated areas.

d. Blue Cross and Blue Shield

Blue Cross and Blue Shield are non-profit health insurance plans (organizations) which provide benefits for inpatient and ambulatory services, respectively. The 75 BC and 71 BS plans provide a variety of insurance programs for group or individual subscribers. Because of their close ties with providers, contracts with the providers are usually negotiated on a cost rather than charge basis. Blue Cross and Blue Shield were originally formed by the medical profession to serve only as financial mechanisms to provide benefits for services. More recently, however, the plans are acting as fiscal intermediaries and carriers for such programs as Medicare, Medicaid, and CHAMPUS, and also are increasingly concerned with cost containment in provider services.

e. Commercial Insurance Companies

Some one thousand commercial insurance companies provide a wide variety of health insurance plans to over 60% of those persons who have private insurance against hospital expenses.* The plans are generally characterized by an indemnity approach to benefit coverage (i.e., dollars per day rather than service coverage), experience rating of risks, and cost control emphasis. Plans vary in their benefit structure, reimbursement forms and channels, and risk-sharing arrangements with the insured groups.

f. CHAMPUS

CHAMPUS, the Civilian Health and Medical Program of the Uniformed Services, is a congressionally-funded comprehensive health benefits program designed to provide families of uniformed services personnel and service retirees an alternative to medical care in military and Public Health Service facilities. As in Medicare, the policy, planning, and funding are federal responsibilities, and the rate setting and operation are performed by fiscal intermediaries. Reimbursement, on an indemnity basis for customary and prevailing charges based on participating provider rates, varies with the member's duty status.

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*Eilers, Robert D., "Financing Health Care: Past and Prospects", _Exponent_ (Minneapolis, Minn., Federal Reserve Bank, 1974), p. 15.

g. Health Maintenance Organizations (HMOs)

Group practice prepayment plans, and their subset Health Maintenance Organizations, are institutions which both finance and provide health care through services which they organize and for which they receive a predetermined premium. They generally operate under state license or charter, and may serve both group and individual subscribers. As a result of the Health Maintenance Act of 1973, they are increasingly an alternative to traditional health insurance. Premiums are determined by the anticipated operating budget, and therefore act as a constraint on costs. Plans vary, but are generally local in scope, encourage ambulatory and routine (preventive) care, and provide federally-mandated minimum services. The plans themselves may own the health care facilities that they use, or may purchase services from providers. Some states require that an HMO be underwritten by an insurance carrier or Blue Cross/Blue Shield.

2.2.2.2 Comparison of Purchasing Plans

All of these plans have the same objective, to purchase health services for their enrollees. However, there is considerable variability among them. Some of the major differences are summarized in Table 2-III. Commercial insurers claim the largest number of enrollees with the Blues second; these organizations also provide the

TABLE 2-III

COMPARISON OF OPERATING CHARACTERISTICS AMONG HEALTH SERVICE PURCHASE PLANS

Program	Number of Programs or Organizations	Number of Persons Enrolled in U.S. in 1974 (In Millions)	Total Benefits Paid in U.S. in 1972[4] (In Billions)	Retention as % of Income in 1972[7]
Title V	56	25 (H, S, M) (Treatments)[1,2]	$0.5 (H, S, M)	
Title XIX	50	26 (H, S, M)	$8.7 (H, S, M)[5]	4.4 (H, S, M)[2]
Title XVIII	2	21 (H), 21 (S, M)	$6.1 (H), 2.3 (S, M)	2.7 (H), 10.3 (S, M)
Blue Cross/ Blue Shield	75, 71	78 (H), 69 (S), 65 (M)	$6.5 (H), 3.1 (S, M)	8.0 (H), 12.8 (S, M)[2]
Commercial Insurance	1000	107 (H), 97 (S), 65 (M)[3]	$4.9 (H), 2.4 (S), $1.8 (M)[2]	16.4 (H, S, M)
Health Maintenance Organizations	180	8 (H, S, M)[3]	$1.0 (H, S, M)	21.5 (H, S, M)[2,8]

Legend:
H = Hospital
S = Surgical
M = Medical

[1] Treatments reflect duplicate counting.

[2] U.S. House of Representatives, Committee on Ways and Means, National Health Insurance Resource Book, (Washington: U.S. Government Printing Office, 1974), pp. 241, 491, 497, 227.

[3] Health Insurance Institute, Source Book of Health Insurance Data, 1974-75, (New York: 1974), pp. 5, 21-24.

[4] Titles V, XVIII, XIX data are in fiscal years; Private plans' data are in calendar years.

[5] 1973

[6] U.S. Department of Health, Education and Welfare, op.cit., p. 6.

[7] Retentions include operating expense, addition to reserves, profits.

[8] Private Group Clinic

widest variety of plans. Their annual claims payments per enrollee tend to be lower than the less heavily enrolled public plans. Although full data are lacking, the annual costs per enrollee of HMOs are probably low relative to other plans.

These differences can be attributed to several factors. The private plans frequently do not offer as liberal benefit structures, require cost sharing with the enrollee, and have a lower risk target population than either Medicaid or Medicare. In contrast, Medicare and Medicaid have significantly fewer enrollees, but relatively large benefits payments. The aged tend to have more costly medical treatment, as do the poor and medically needy. Unlike the other payment approaches, the HMO structure provides built-in incentives for cost control.

Lower cost per claim may also be associated with emphasis on preventive treatment and liberal outpatient benefits. Preventive care is never covered under Medicare or CHAMPUS, is covered sometimes under Blue Shield and private plans, but universally under HMOs and Title V clinics. The plans vary similarly in whether the outpatient costs are covered as fully as inpatient. Medicare, CHAMPUS, private insurance plans, and frequently Blue Cross provide more complete coverage for inpatient than for outpatient service, therefore providing incentives for the use of expensive inpatient treatment modes.

Income to insurance and public assistance plans must cover administration as well as benefit payments. Their relative proportions, as measured by the administration costs/income ratio, vary significantly among the plans. One reference cites ratios varying from less than 5% to over 23%. Generally, administrative costs are relatively high among low risk plans and plans with liberal outpatient and drug benefits, since the smaller claims (on the average) may require the same administration per claim as larger ones. Thus, Medicare A has an extremely low administration cost ratio, primarily because of the high payment per claim. Thorough claims review procedures increase administrative costs but hopefully lower claims costs. One-third of Medicare's administrative costs are due to their auditing procedures. Such auditing standards maintain the integrity of the cost reimbursement method; however, their net return (savings less administrative cost) varies with the average claim size as well as with the potential for savings.

Administration costs are also affected by the degree of standardization of the type of insurance plan. Medicare and CHAMPUS have standard nation-wide programs, due to their Federal nature and homogeneous populations. Medicaid is standardized within each state. Each Blue Cross/Blue Shield organization generally offers many different plans, and private insurance organizations offer a considerable diversity of benefits, and use different forms and procedures. In addition, the latter incur large selling and underwriting costs.

2.2.3 Institutions Providing Service

Hospitals, nursing homes and health maintenance organizations are here described in more detail.

2.2.3.1 Hospitals

A hospital is usually defined as a facility with at least six beds that provides 24 hours per day diagnostic and treatment services for patients having a variety of illnesses and medical and surgical conditions. Service is provided on an inpatient basis and also frequently in outpatient departments and emergency rooms and through associated home health agencies.

Hospitals are classified by the American Hospital Association according to length of stay (short-term[1] or long-term[2]); by major type of service (general medical and surgical or specialty[3]); and by control, or type of organization operating the hospital -- governmental (Federal, state or local) or non-governmental (voluntary or proprietary).[4] Hospitals may be further classified as teaching or non-teaching; urban or rural; and according to number of beds. The community hospital is usually a general medical and surgical, short-stay, voluntary hospital; most are non-teaching facilities and have fewer than 200 beds.

A license to operate within a state (in most states issued by the state health department) enables the institution to engage in the delivery of health services. Each state (except Ohio, which does not license general hospitals) and the District of Columbia require that general hospitals be licensed in order to operate; all states and the District of Columbia license specialty hospitals. Requirements and standards for licensure may vary considerably from state to state.

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[1] Short-term: over 50 percent of all patients have a stay of less than 30 days.

[2] Long-term: over 50 percent of all patients have a stay of 30 days or more.

[3] Specialty hospitals include tuberculosis, psychiatric, chronic disease and other (maternity; eye, ear, nose and throat; children's; orthopedic; chronic; and all other).

[4] The definitions in footnotes 1-3 are from "Hospitals", Journal of the American Hospital Association, August 1, 1970, Vol. 44, Part 2, p. 462.

Of the nation's 7,480 hospitals in 1972, nearly 7/8 were short-stay general medical and surgical. Specialty hospitals are institutions that usually limit their admissions to patients with specified illnesses or conditions; they are mostly long-stay. In 1972 there were 990 specialty hospitals in the United States; about half were psychiatric hospitals, which, however, had about 5/6 of the beds. Nearly 53 percent of all beds in general hospitals are in voluntary institutions.

General hospitals range widely in size. In 1972, approximately 30 percent had a capacity of 6-50 beds, and about 3 percent had a capacity of more than 1,000 beds. Sixteen percent of all specialty hospitals had a capacity of 1,000 beds or more and almost all of these were psychiatric hospitals.

Table 2-IV shows summary statistics for hospitals, nursing homes and HMOs.

2.2.3.2 Nursing Homes

The term "nursing home" can designate a facility providing only room and board to the aged and ill, with only the simplest type of supportive services, or a home providing highly skilled and intensive nursing care. In the Master Facility Inventory (MFI)[*], facilities providing some form of nursing, personal or domiciliary care are classified according to the predominant service provided as a nursing care home, a personal care home with nursing care, a personal care home without nursing care, and a domiciliary care home . If room and board are the only services provided by an

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[*] The Division of Health Manpower and Facilities Statistics of the National Center for Health Statistics collects data on all inpatient health facilities in the United States. This data system is known as the Master Facility Inventory (MFI).

TABLE 2-IV

Summary Statistics for Institutional Providers*

A. HOSPITALS - 1972	General	Specialty	Total
No. hospitals	6,490	990	7,480
No. beds (thousands)	1,014	453	1,467
Total No. hospitals certified for Medicare and Medicaid			6,190
No. admissions (millions)	32.9	1.1	34.0
No. discharges (millions)	33.0	1.2	34.1
No. outpatient visits (millions)	213	9	222
Total No. Emergency Visits (millions)			65.9
Total patient days (millions)			433.7
Average daily census (thousands)	762	378	1,140

B. NURSING HOMES - 1971 (thousands)	No. Homes	No. Beds
Nursing care	12.9	918
Personal care homes with nursing	3.6	192
Personal care homes without nursing	5.4	88
Domiciliary care	0.20	8
Total	22.1	1,206
Certified homes - 1975		
SNFs - Medicare & Medicaid	2.3	
SNFs - Medicare only	4.0	
SNFs - Medicaid only	3.3	
ICFs - Medicaid	4.4	
No. of residents - 1971	1,076	

C. HEALTH MAINTENANCE ORGANIZATIONS (HMOs)** - April 1975 (thousands)	
No. HMOs	0.17
No. Enrollees	5,734
No. HMOs with Medicaid contracts	0.07
No. Medicaid participants	over 340

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*Sources: Statistics for hospitals and nursing homes are the most recent available in the Master Facility Inventory as published in Health Resources Statistics, DHEW Publication (HSM) 73-1509, 1974, except for statistics on skilled Nursing Facilities (SNFs) and Intermediate Care Facilities (ICFs) which were supplied by the American Nursing Home Association.

**Statistics are for April 1975. Source: U.S. Department of Health, Education and Welfare, Health Services Administration, Health Maintenance Organization Program Status Report, DHEW Publication (HSA) 75-13022A, May 1975.

establishment, or if the facility has less than three beds, it is not classified as a nursing home in the MFI.* The data summarized in the text and appendices of this report are classified according to this scheme.

Other designations for nursing homes are used in the Social Security Legislation. The 1965 amendments to the Social Security Act (Title XVIII, Medicare) provided for the financing of up to 100 days post-hospital care (following discharge after a minimum stay of three days in a hospital) for persons over 65 in an "extended care facility". Such a facility provides round-the-clock nursing services and medical supervision as an extension of hospital care.

Title XIX of the Social Security Act (Medicaid), enacted in 1965, and subsequent amendments specify that states administering medical assistance programs must offer care in a "skilled nursing home" to needy and medically indigent individuals over 21. A skilled nursing home is staffed to provide round-the-clock nursing care to residents who need it, as well as restorative health and therapy services.

The Social Security Amendments of 1972 (effective 1 July 1973) provide a single definition -- "skilled nursing facility" (SNF) -- and a single set of health, safety, environmental and staffing standards for what were formerly identified as extended care facilities under Medicare and as skilled nursing homes under Medicaid.

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*Definitions of nursing homes are from Health Resources Statistics, op. cit., p. 382.

Title XIX of the Social Security Act also recognizes another level of care in an "intermediate care facility" (ICF). Intermediate care facilities provide health care and services to those who do not require care in a skilled nursing facility but who are not capable of fully independent living. ICFs provide long-term institutional care to many elderly persons who do not need the level of care available in SNFs under Titles XVIII and XIX.

The 1972 amendments give the Secretary of Health, Education and Welfare the decision as to whether a facility qualifies to participate as a SNF in both the Medicare and Medicaid programs. Previously, even though a facility wished to participate in both programs, certification of Medicaid facilities was made by state officials and the Secretary certified facilities participating in Medicare. Henceforth, only ICFs and SNFs wishing to participate in Medicaid alone will be certified by state officials.

Nursing homes are required to be licensed currently in each of the 50 States and the District of Columbia. The minimum standards, rules and regulations for nursing homes have little uniformity in terminology, definitions, or licensure requirements.

Statistics on nursing homes are given in Table 2-IV.

As of 1971, 78 percent of all nursing homes (with 67 percent of all beds) were proprietary. Voluntary non-governmental homes, including those owned and operated by fraternal groups and religious orders, constituted 16 percent. The remaining 6 percent were owned and operated by local, state and Federal government.

Thirty-nine percent of the nursing homes had less than 50 beds. Nursing care homes on the average maintained more beds than the various types of personal and domiciliary care facilities.

Nationally, there were approximately 58 beds per 1,000 civilian population 65 years of age and over in 1971. However, there was considerable variation by state in bed-to-population ratios from a high of 98.9 for Minnesota (followed by Iowa (95.7) and Alaska (93.2)) to a low of 19.4 in West Virginia.* (The reader is referred to the Appendix for more detailed statistics on nursing homes.) Summary statistics for hospitals and nursing homes are displayed in Table 2-IV.

2.2.3.3 Health Maintenance Organizations (HMOs)

As discussed in Section 2.2.2, Health Maintenance Organizations are group practice prepayment plans meeting certain additional criteria. HMOs finance as well as deliver health care by means of predetermined annual charges to member individuals and families. HMOs tend to emphasize preventive medicine and ambulatory care.

Most HMOs are nonprofit. Some, however, are proprietary and some own hospitals. HMOs are usually local; most offer service to persons residing in a major metropolitan area. In April 1975 there were 173 HMOs in 33 states, the District of Columbia and Guam.** See Table 2-IV for other statistics.

The first widely known HMO was the Kaiser-Permanente Medical Care Program initiated in the 1930's. Since then HMOs experienced extremely slow growth until the early 1970s, largely because of opposition from organized medicine.

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* Health Resources Statistics, op. cit., pp. 381-83.

** U.S. Department of Health, Education and Welfare, Health Services Administration, Health Maintenance Organization Program Status Report, DHEW Publication (HSA) 75-13022A, May 1975, pp. 1-22.

The Health Maintenance Organization Act of 1973 (P.L. 93-222) provides for the removal of barriers that may have blocked the growth of HMOs. These barriers are lack of capital, addressed by financial assistance provisions; lack of permissive state laws, addressed by override provisions; and lack of access to potential patients, addressed by the "dual choice" provisions. (Employers of 25 or more persons, in an area served by an HMO, must offer enrollment in the HMO as an alternative form of health insurance.)

On May 9, 1975, HEW's Social and Rehabilitation Service (SRS) published final regulations setting forth requirements for states contracting on a prepaid basis for health services under Title XIX. Fourteen states and the District of Columbia have now entered into prepaid Title XIX contracts with 74 organizations. Over 340,000 Medicaid eligibles are enrolled.

The 1965 amendments to the Social Security Act, Title XVIII, provided that group practice prepayment plans could be reimbursed on a cost basis for physicians and related services (Section 1833 (a) (1)).*

2.3 National Health Insurance

During the 93rd Congress, 23 bills on National Health Insurance were introduced. As of this writing, versions of four of these bills have been reintroduced into the 94th Congress. They range from the primarily private Health Care Insurance Act (H.R. 2222 Fulton, Duncan,

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*U.S. Department of Health, Education and Welfare, Health Services Administration, Health Maintenance Organization Program Status Report, DHEW Publication (HSA) 75-13022A, May 1975, pp. 1-22.

Carter, Murphy) supported by the American Medical Association to the mainly public Health Security Act (H.R. 22 Corman, S3 Kennedy) supported by the AFL-CIO. In between are two mixed public-private plans, the National Health Care Services Reorganization and Financing Act (H.R.1 Ullman) endorsed by the American Hospital Association; and the National Health Care Act (H.R. 5200 Burleson, S1100 McIntyre) endorsed by the Health Insurance Association of America. Two other prominent bills have not yet been reintroduced. The Administration's Comprehensive Health Insurance Act (H.R. 12684 Mills-Scheneebeli, S2970 Packwood, CHIP), also mixed in orientation, will probably be reintroduced in 1976. Also not yet reintroduced is a representative of a fourth category of bills which deals primarily with "catastrophic protection", the Catastrophic Health Insurance and Medical Assistance Reform Act (S2513 Long-Ribicoff). Table 2-V presents these six plans.

Since fairly complete summaries of these bills are available*, the various provisions will not be restated here. Instead, the focus will be on the impact of major NHI legislation on the areas of administration, costs and funding, and on the assignment of roles to participants.

Common aspects among the six bills become apparent. Similar types of issues would be involved in NHI implementation, such as appropriate regional structures for efficient administration; consequences of complex formulas for assistance to low-income families and individuals; the amount of paperwork and red tape faced by providers;

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*National Health Insurance Proposals Provision of Bills Introduced in the 93rd Congress as of July 1974, U.S. Dept. HEW 75-11920 Compiled by Saul Waldmen, (Washington: 1974).

TABLE 2-V

IDENTIFICATION OF NHI PROPOSALS*

Name	Numbers	Sponsors	Supporters	Status
National Health Care Services Reorganization and Finance Act	H.R.1	Ullman	AHA	Submitted to House of Representatives
Comprehensive Health Insurance Act	(H12684) (S 2970)	Mills Scheneebeli Packwood	Administration	To be submitted in 1976
Healthcare	H.R.5200 S 1100	Burleson McIntyre	HIAA	Submitted to 94th Congress
Health Security Act	H.R.22 S 3	Corman Kennedy	AFL-CIO	Submitted to 94th Congress
Medicredit (new version)	H.R.2222	Fulton Duncan Carter Murphy	AMA	Submitted to House of Representatives
Catastrophic Health Insurance and Medical Assistance Reform Act	(S 2513)	Long Ribicoff		Not yet resubmitted

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*As of 19 May 1975.

third party involvement, whether by carriers, intermediaries, clearinghouses, or banks (not so critical for Long-Ribicoff unless health credit cards are used).

As can be seen in Table 2-VI, the degree and type of departure from the current purchaser system varies among the bills. The Burleson-McIntyre plan envisions a system utilizing the existing private insurance and Medicaid mechanisms, with a restructuring of health care delivery systems. It shifts much of the information system mechanisms to the state level. The Ullman and Corman-Kennedy bills also require a restructuring of the current health care delivery system. Standardization is stressed in all three proposals. However, the latter two advocate a centralized approach in which the Federal government is a major participant in administration. Both establish new participants in the system, which necessitate new information channels. For the Ullman Bill these are a new Federal Department of Health and Health Care Corporations. For the Corman-Kennedy Bill, new strata of operations, regional and local, supplant the state and private purchaser functions.

The Long-Ribicoff Bill also shifts the focus of the information system to Federal levels, but augments the private insurance role.

The Medicredit Bill, in contrast, maintains the same health care delivery and purchaser systems. Instead, emphasis is on uniform reviewing, standards determination, financing, and coverage.

The Administration Bill envisions a system in which the provider and purchaser mechanisms are relatively unchanged, except for stricter regulation. Like the Burleson-McIntyre Bill, however, it advocates a more decentralized program with states playing a major role in both administration and finance.

TABLE 2-VI

COMPARISON OF PARTICIPANT ROLES AMONG SIX NHI PROPOSALS

	Participant in Current System				
Proposal	Medicaid	Medicare	Private Ins.	Federal Government	State Government
Ullman	federalized	replaced	maintained	augmented*	augmented**
Administration	supplements plan	revised	maintained	minimized	augmented
Burleson-McIntyre	supplements plan	eliminated	maintained	minimized	augmented
Corman-Kennedy	supplements plan	eliminated	eliminated	maximized	minimized
Medicredit	supplements plan	maintained	maintained	maintained	maintained
Long-Ribicoff	federalized	maintained	augmented	maximized	minimized

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*new DOH

**State Health Commission

	Administrative Functions to be Performed in System				
Proposal	Policy	Planning	Rate Setting	Funding	Operation
Ullman	federal	state	state	federal	private, state
Administration	federal	state	state	fed./priv./st.	fed./priv./st.
Burleson-McIntyre	federal/state	private	state	fed./priv./st.	private
Corman-Kennedy	federal	federal	fed./regional	fed./priv.	regional
Medicredit	federal	federal (same as current)	private	fed./priv.	state/priv.
Long-Ribicoff	federal	fed'l./priv.	private	fed./priv.	private

The funding of the six plans can be seen in Table 2-VII. Most of the proposed NHI plans tend to emphasize insurance rather than assistance, although they frequently rely on Medicaid or its equivalent as a supplement. The Corman-Kennedy Bill is an exception, as it treats the entire population uniformly and is federally financed. The Long-Ribicoff plan, which is unique due to its emphasis on catastrophic coverage, is the only other plan which does not rely on traditional employment financing channels. The four other NHI plans vary in their relative mix of employer, employee, and Federal contributions. The Ullman Bill proposes no Federal contribution to employee insurance, whereas Medicredit and the Burleson-McIntyre Bill allow contributions to be tax deductible. The Administration Bill permits temporary Federal subsidies until the contributions are stabilized.

TABLE 2-VII

FUNDING OF SIX NHI PROPOSALS BY CLIENT POPULATION GROUP

Proposal	Patient Group	Funding Source	Method of Funding
Ullman	Employed*, individuals	Employer 75% Employee 25%	Premiums
	Poor, medically needy	Sliding scale, enrollee Fed'l. revenues	Premiums and subsidies
	Aged	Payroll taxes	Premiums
Administration	Employed*	Employer 75% Temporary federal subsidies Employee 25%	Premiums
	Low Income, High medical risk	Sliding scale, enrollee; Sliding scale, Federal & State revenues	Premiums, state grants
	Aged	Payroll taxes, enrollee premiums, general revenue	Premiums/Appropriations
Burleson-McIntyre	Employed* individuals	Employer-Employee Tax deductible	Premiums
	Poor, uninsurable	Sliding scale, enrollee Federal, State revenue	Premiums, general revenue
Corman-Kennedy	All U.S. residents	Tax on payroll, income; Federal revenue	Appropriations
Medicredit	Employed*	Employers 65% Deductible Employees	Premiums
	Poor, self-employed, unemployed, aged	Federal revenue	General federal revenue
Long-Ribicoff	Insured persons or Social Security benefit recipients	Special tax	Premiums
	Poor	General and Federal, State revenue	Appropriations

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*Employed persons and their families and other groups.

3. RATE SETTING, REIMBURSEMENT AND ASSOCIATED FUNCTIONS

3.1 Introduction

Chapter 3 describes the subset of functions, carried out by the participants identified in Chapter 2, that the PRSIS will be designed to support. This subset includes rate setting and associated regulatory and planning functions, and the relevant functions of bulk purchasers and institutional health care providers. First, however, it is necessary to review briefly certain aspects of the delivery of health care.

The substantive content of institutional health care delivery can be discussed in two different frames of reference: first, the set of activities carried out by an institutional provider to serve all of its patients; and second, the set of health care service events relating to a single illness episode for one patient -- i.e., a single case. The activity-oriented viewpoint is useful in some functions of interest here, the case-oriented viewpoint in others. The characteristics of the two viewpoints are given below.

The provider institution carries out activities such as nursing care that directly serve its patients, and also activities such as administration and maintenance that support the direct services. The list of activities carried out will vary of course with the type of institution. For a short-stay, general medical and surgical hospital, for example, the activities carried out could be similar to those listed in Table 3-I. It is the costs of these operational activities, as well as non-operational costs such as capital expenditures, that PRS seeks to control. The list of activities is also a list of the different departments within the provider organization; it determines the structure of the operational budgeting and

TABLE 3-I

EXAMPLE OF PROVIDER ACTIVITIES

(For short-stay general hospital)

DIRECT PATIENT SERVICES (or revenue-generating services)

Routine (Nursing) Services

- General Medical and Surgical[*]
- Intensive care, coronary care, progressive care

Special Services

- Nursery
- Operating, recovery, delivery rooms
- Central supply room and medical supplies
- Emergency service
- Laboratory
- Radiology
- Nuclear medicine, respiratory therapy, cardio-pulmonary, EEG, pharmacy, anesthesia
- Physical therapy, home care service

OTHER ACTIVITIES (or supporting services)

Patient-Oriented

- Dietary
- Social service, admitting, out-patient, medical records

Operation and Maintenance

- Operation of plant
- Maintenance, housekeeping, laundry and linen, switchboard

Administrative & Financial

- Fiscal services, credit and collection, payroll, purchasing
- Admin. & general, personnel, volunteers, public relations

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[*] Includes obstetric and psychiatric care units.

accounting system that furnishes the basis for rate submissions by providers. For budgeting and rate setting purposes, each activity is considered to have a measure of activity volume (or units of service), and a cost in dollars. From the financial point of view, the direct activities are called revenue generating, and the indirect ones, supporting or non-revenue generating.

The individual case consists of a set of service interactions delivered to a single patient to cope with a single illness episode. The interactions may be for diagnosis, test, treatment (surgical or medical), and/or rehabilitation. The set of interactions will vary by diagnosis, choice of institution, choice of service mode, and many other factors. For example, an in-patient case in a short-stay medical and surgical hospital might have a set of service interactions like that shown in Table 3-II. PRS may be concerned not only with provider activity costs as described above, but also with costs per case or illness episode, depending upon the PRS methodology utilized. For purposes of obtaining reimbursement to the provider, the case is summarized by a Bill; for purposes of medical review and analysis, by a Discharge Abstract. The Bill and the Discharge Abstract are key documents that would be directly involved in some PRSIS options.

The remainder of the Chapter deals with rate setting and associated functions for institutional health care. First, the functions of interest are described in terms of approaches utilized, initiating events, typical procedures, and data utilized or generated. As appropriate, sample budgets, bills, discharge abstracts and other key documents are included for illustrative purposes. Next, some financial aspects of health care delivery are identified, and their relation to the regulatory and planning functions is explored. Finally, the probable impact of national health insurance on the functions is indicated.

TABLE 3-II

ELEMENTS OF A PATIENT CASE

Types of service interactions for an in-patient case in a short-stay hospital.

A. PRELIMINARY DECISIONS AND CONDITIONING ACTIVITIES

1. Prior health care choices and medical experience, such as enrollment in insurance or public assistance plan, prior health care service episodes.
2. Initial contact with primary care physician* for subject complaint, initial diagnosis, decision to obtain hospital service, choice of hospital and mode of service (e.g., in-patient).

B. HEALTH CARE IN HOSPITAL

1. Admission and initiation of general nursing care.
2. Diagnostic and other tests as needed (i.e., radiology, laboratory), and possible modification of diagnosis.
3. Surgical and/or medical treatment, as appropriate.
4. Subsequent medications, tests, rehabilitative services, as appropriate.
5. Discharge to self care or transfer to another mode of service.

C. FOLLOW-UP SERVICE, IF REQUIRED

Subsequent service, as in-patient in specialty or other hospital, as out-patient for follow-up, as resident of nursing home, or as user of home health service.

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*Primary care physician could be in a hospital outpatient department.

3.2 Procedures Now Utilized and Associated Data

The procedures that are currently utilized for rate setting and related functions are described below.

3.2.1 Prospective Rate Setting, CES Review, Planning and PSRO Review

These functions are concerned with the regulation of health care services, and with planning for their modification and improvement. CES review and planning normally take an activity viewpoint (frequently for groups of institutions); PSROs take a case viewpoint, looking mostly at individual cases, but also at multi-case statistics. Depending upon the approach utilized, rate setting can take either an activity or a case viewpoint, although the activity view is predominant.

3.2.1.1 Prospective Rate Setting

The overall rate setting function, where now being carried out on an operational or experimental basis, has many possible variations, but these nonetheless can be structured according to basic approach, basis of payment, and other parameters as summarized in Table 3-III. Four basic approaches to rate setting are bidding, negotiation, budget review or budget review by exception, and use of a formula. These four approaches span a continuum from decentralized and non-analytical (bidding, negotiation) to centralized and analytical (formula).

A bidding approach, though apparently one has never been implemented, would entail third party purchasers soliciting bids from providers (e.g., the Blues might do this for a specified region or state). Negotiation is characterized by a one-to-one relationship between provider and rate setter; this approach is particularly sensitive to local and provider-specific problems, but it tends to be administratively quite complex when dealing with large numbers of institutions.

TABLE 3-III

ELEMENTS OF RATE SETTING

- Approaches
  - bidding
  - negotiation
  - budget review (by exception)
  - formula (applied to increases or predictive)
- Basis of Payment
  - charges
  - inclusive per diem
  - per admission (gross or for specific diagnosis)
  - allocation of budgeted costs
  - capitation
  - illness episode
- Incentives and Risk
  - incidence of risk (on provider and/or third party payor)
  - positive and negative incentives
  - incentive formula
    - firm fixed price
    - intermediate plan
    - direct cost reimbursement
  - "tightness" of the rate
  - micro vs. macro incentives
- Determination of Reasonableness/Cost and Productivity Screens/Formulas
  - institution's history and budget (costs, revenues, utilization)
  - nonallowable departmental costs (research, bad debts, charity)
  - interinstitution or intra-group comparison
  - intra-institution (cost center) comparison
  - formula ceilings or floors (for individual institution, or percent above or below group average)
  - predictive formulas (normative standards, zero baseline budgeting)
  - quality of care indices
  - economic trends/external indices
- Rate Adjustment
  - justification (uncontrollable or extraordinary changes in costs, volume, patient mix)
  - alternative approaches
    - no adjustment permitted
    - retrospective adjustments for given year
    - changes in prospective rates during year
- Appeals by Provider Institutions to:
  - original rate setting agency
  - special Appeals Board
  - independent outside group/arbiter
  - courts

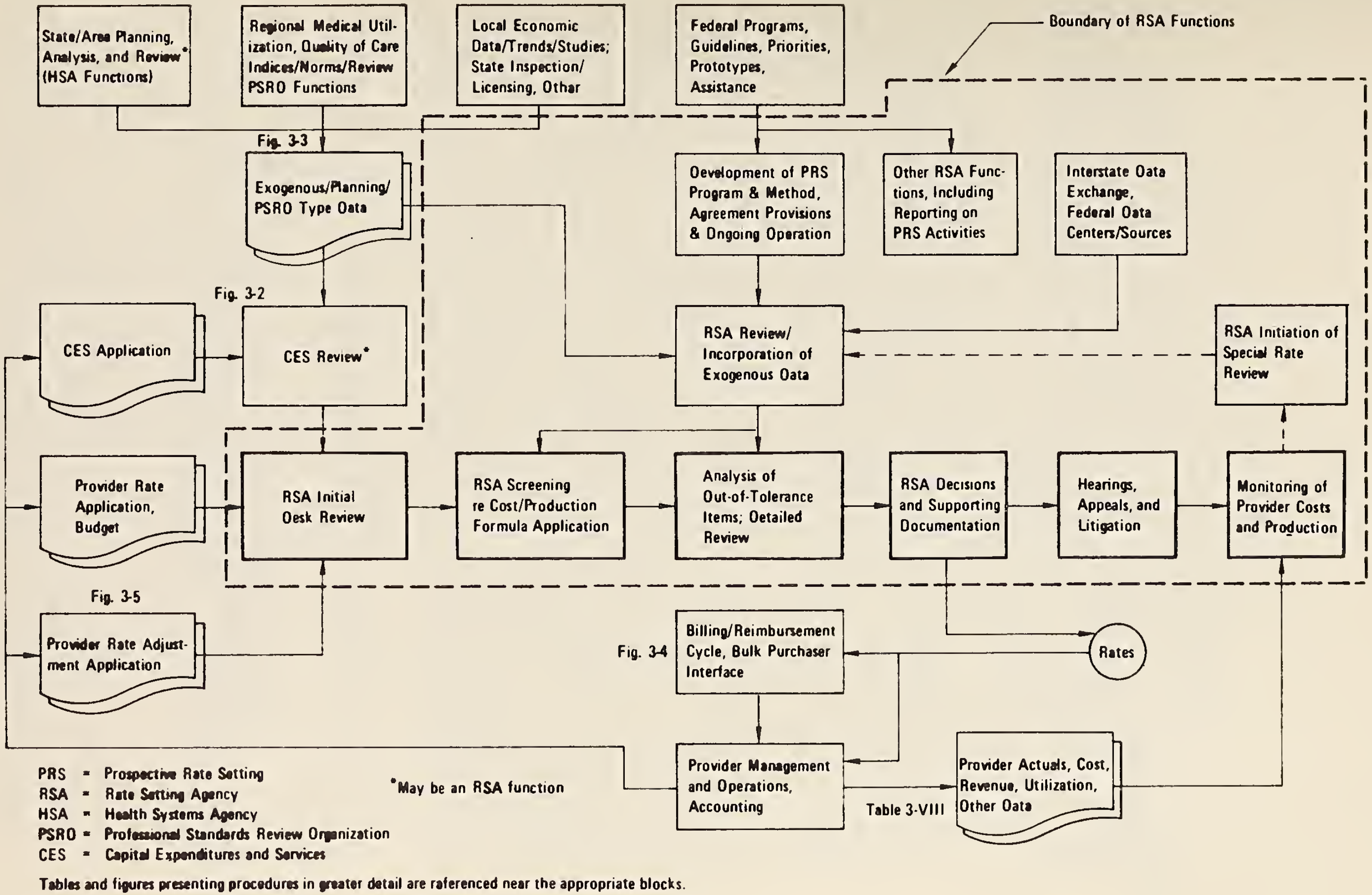
Budget review may focus on departments or cost centers, or on more detailed items, including in the extreme specific services, or by exception, on cost centers or items which fall outside thresholds established or used by the rate setting agency. Finally, in a formula approach allowable increases may be based on percentages applied to historic costs, or predictive formulas may be employed -- in the extreme based on a zero-baseline-budget concept.

The basis for the rate, or unit of payment, may be charge per service, inclusive per diem, per admission, allocation of budgeted costs, capitation, or illness episode. Charge is the most widely used unit, being utilized in 15 PRS systems, but its use generally requires extensive cost analysis. Inclusive per diem, or average cost per patient-day, is the next most common, and is the unit in 6 systems.

Per admission, also referred to as case or stay, may be either gross or for specific diagnoses; gross per admission measures the average cost of treating a patient, and may in principle be based either on a single provider, a peer group average, or a normatively-derived cost. Budget allocation is a monthly (say) apportionment, possibly with seasonal variations, of either the total provider budget or departmental/cost center budgets. Capitation is either on a per individual or per family basis, and applies currently to HMOs. Finally, illness episode is an alternative which recognizes the multi-admission, multi-diagnosis nature of many types of treatment.

PRS may embody different types of incentive schemes, including both positive and negative incentives. With negative incentives, the provider is at risk for all or part of the overage if actual expenditures exceed prospectively budgeted costs (without an acceptable explanation). Positive incentives, on the other hand, permit the provider to keep all or part of the underage if expenditures are less than budgeted costs. In general, risk may be shared by the provider and the third party payor, and in some cases the provider has an option on its level of risk (e.g., in Connecticut, hospitals can choose at the start of the year whether they wish to assume 50 or 100 percent risk). Various incentive formulas may be employed, such as firm fixed price (100 percent provider risk for overage, 100 percent payor risk for provider underage), direct cost reimbursement (zero provider risk; retrospective rate setting), and intermediate risk sharing arrangements.

The level at which the rate is set, i.e., the "tightness" of the rate, is at least as important as the incentive/risk structure, since rates which are either unrealistically high or unrealistically low will tend to either encourage inefficiency and high costs, or reduce the quality of care and possibly drive otherwise viable institutions out of business (or generate many lengthy appeals and litigations). Attention should be given to macro incentives affecting health care in an area (e.g., encouraging trends toward more ambulatory care), as well as to micro incentives dealing with improved provider management and utilization efficiency. The central portion of Figure 3-1, enclosed in dashed lines, portrays the activities of the rate setting agency (RSA). The boxes enclosed by heavy lines indicate the primary rate setting functions, which are described in more detail in Table 3-IV.


State/Area Planning, Analysis, and Review* (HSA Functions)
Regional Medical Utilization, Quality of Care Indices/Norms/Review PSRO Functions
Local Economic Data/Trends/Studies; State Inspection/Licensing, Other
Federal Programs, Guidelines, Priorities, Prototypes, Assistance
Boundary of RSA Functions
Fig. 3-3
Exogenous/Planning/PSRO Type Data
Development of PRS Program & Method, Agreement Provisions & Ongoing Operation
Other RSA Functions, Including Reporting on PRS Activities
Interstate Data Exchange, Federal Data Centers/Sources
Fig. 3-2
CES Application
CES Review*
RSA Review/Incorporation of Exogenous Data
RSA Initiation of Special Rate Review
Provider Rate Application, Budget
RSA Initial Desk Review
RSA Screening re Cost/Production Formula Application
Analysis of Out-of-Tolerance Items; Detailed Review
RSA Decisions and Supporting Documentation
Hearings, Appeals, and Litigation
Monitoring of Provider Costs and Production
Fig. 3-5
Provider Rate Adjustment Application
Fig. 3-4
Billing/Reimbursement Cycle, Bulk Purchaser Interface
Rates
Provider Management and Operations, Accounting
Table 3-VIII
Provider Actuals, Cost, Revenue, Utilization, Other Data

PRS = Prospective Rate Setting
RSA = Rate Setting Agency
HSA = Health Systems Agency
PSRO = Professional Standards Review Organization
CES = Capital Expenditures and Services

*May be an RSA function

Tables and figures presenting procedures in greater detail are referenced near the appropriate blocks.

Figure 3-1. Steps and Functional Interfaces in a Prospective Rate Setting Process

TABLE 3-IV

KEY FUNCTIONS OF THE RATE SETTING PROCESS

a. Review provider submission. Review all material submitted, including back-up reports. This initial desk review includes signing in, checking, filing, and preparation of data processing inputs as required. Obvious omissions or lack of important data would be identified at this stage, and supplementary information or resubmittal may be requested.

b. Conduct initial screening. Determine the reasonableness of the provider's budget, cost centers, or specific services by application of cost and productivity screens, and formulas or formula ceilings. Productivity screens often take the form of prospectively specified (known to providers) utilization minima. Cost screens are based either on an institution's own historic costs or on comparison with other "similar" institutions, and on percentages applied to either total costs or rates of increase in costs. The grouping of institutions for purposes of comparison can be based on judgement ("eyeballing") or on a statistical approach such as cluster analysis. Such groupings can be functions of many parameters, including: size (number of beds or average occupancy), outpatient activity, teaching status (number of interns, residency programs, associated school of professional nursing or technical school), nonroutine services (intensive and coronary care units, cardiac arrest team, advanced radiology), staff mix, patient or case mix, and geographic location/socio-economic factors. Additional screening factors may include quality-of-care indices and specific attention to (or factors for) nonallowable departmental costs such as research, bad debts and charity. The screening/test-for-reasonableness function can be automated, at least in part, and is most advantageous in dealing with large numbers of provider submissions.

c. Handle out-of-tolerance items. Analyze out-of-tolerance items; hold detailed reviews and discussions as necessary. This is the "by exception" part of budget review by exception, or a detailed analytical step in a formula approach. In a pure budget review approach all budget items can be examined in every case and the previous (test for reasonableness) step omitted. In a pure formula approach, on the other hand, this step (detailed budget or rate submittal review) may be omitted. Rate setting agency staff may visit and request clarification or additional back-up data from the provider. A PRS audit may also be carried

-continued-

TABLE 3-IV (concluded)

out at this time, either by the agency staff or by outside auditors at their request. Input may be requested as well from area planning agencies (HSAs) on further grouping analysis, on the capital expenditure component of the budget and rate submittal, and on validation of unusual or special circumstances leading to unexpectedly high costs or low utilization; state health regulatory agencies concerning certification and licensing; and PSROs regarding regional norms, statistical/quality of care indices, and violations or disapproved services impacting on reimbursement.

d. Make decisions. Make and document decisions with respect to rates for covered purchasers. Reports specifying rates are sent to the purchaser for interim (subject to provider or purchaser appeal) reimbursement, to the provider, and in more aggregate form to HSAs and agencies at higher levels of government.

e. Handle hearings, appeals, and litigations, as necessary. Typically a provider or purchaser first can request reconsideration by the original rate setters, then has recourse to an Appeals Board and/or an Arbitration Committee, followed finally by judicial review. If the appeal decision does other than uphold the interim (i.e., prior to appeal) rate, the rate setting agency may seek arbitration, and finally judicial review if the result is still deemed unsatisfactory. While appeals and arbitration can be limited as a rule to days or at most a few weeks, judicial review can take months. The appeals process can occur either following a regular rate change request, typically once a year, or following a rate adjustment request (based on unusual or unexpected circumstances) later in the year.

f. Monitor provider activity and costs. The providers may be required to submit quarterly, semi-annual, or other periodic reports on actual revenues, costs, activity and utilization. HSAs, PSROs, and rate setting agencies in this instance have need for essentially the same financial and activity data, although PSROs and in some cases HSAs require additional medical data. RSA may also monitor provider bills for compliance to specified rates.

The primary rate setting functions, as identified in Figure 3-1 and Table 3-IV, are the following:

a. Initial Desk Review
b. Screening re Cost/Production Formula Applications
c. Analysis of Out-of-Tolerance Items
d. Decision and Supporting Documentation
e. Hearings, Appeals and Litigations
f. Monitoring of Provider Costs and Production

In addition to these primary functions, the RSA also carries out other activities that are shown within the dashed lines of Figure 3-1. One of these activities is development of the PRS program and rate setting structure. This in itself is a complex process which may require extensive discussions, hearings, workshops, training sessions and other interactions with provider and purchaser representatives and other interested parties. It may involve development and establishment of standardized budgeting, accounting and reporting systems, including measures of activity (utilization), as well as standardized systems for acquiring and updating data for provider classification.

Figure 3-1 also shows the activities that directly interface with PRS. It identifies 1) inputs from interfacing agencies as well as other exogenous sources such as local economic/labor indicators and inflation rates; and 2) the billing/reimbursement cycle (detailed later in this report), which conceptually links the provider budget preparation/rate change submittal, the triggering event of rate setting for the coming year, with the establishment of the rates themselves. Under certain rate setting systems, it is also possible for the rate setting agency to initiate rate review, and in general this may take place any time of the year.

In summary, the spectrum of inputs to the rate setting process are provider rate applications generally including budgets, actuals, and special rate submittal data and forms; provider rate adjustment applications with appropriate back-up material; CES review applications or simply the outcome of such reviews; periodic provider reports on actuals including cost, revenue and utilization data; data and reports from planning agencies; quality of care indices, norms, utilization studies, and other information from PSROs; local economic and demographic data; guidelines, priorities, prototypes, technical assistance, and statistics and research results from federal agencies, primarily in DHEW; and data from other states (e.g., to better classify providers into groups and compare costs). The primary outputs of rate setting are the rates themselves, with associated back-up reports and summarized results of provider monitoring. Rate setters may also provide technical assistance to providers in meeting rate setting requirements. In addition, they report to Federal agencies as required.

3.2.1.2 CES Review

The basic functions of Capital Expenditures and Service (CES) controls, whether of the Certificate of Need (C/N), 1122[*], or other type, are to limit unjustified large capital expenditures, changes in bed size, and major changes in service, and to help fund planning and implementation of justified projects, all of which have a direct bearing on PRS. In fact, CES Review may be carried out all or in part by the PRS agency. According to Lewin[**], PRS and CES are functions of the same agency in at least three states.

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[*] 1122 refers to Section 1122 of the Social Security Act; see Section 2.2.1.2.

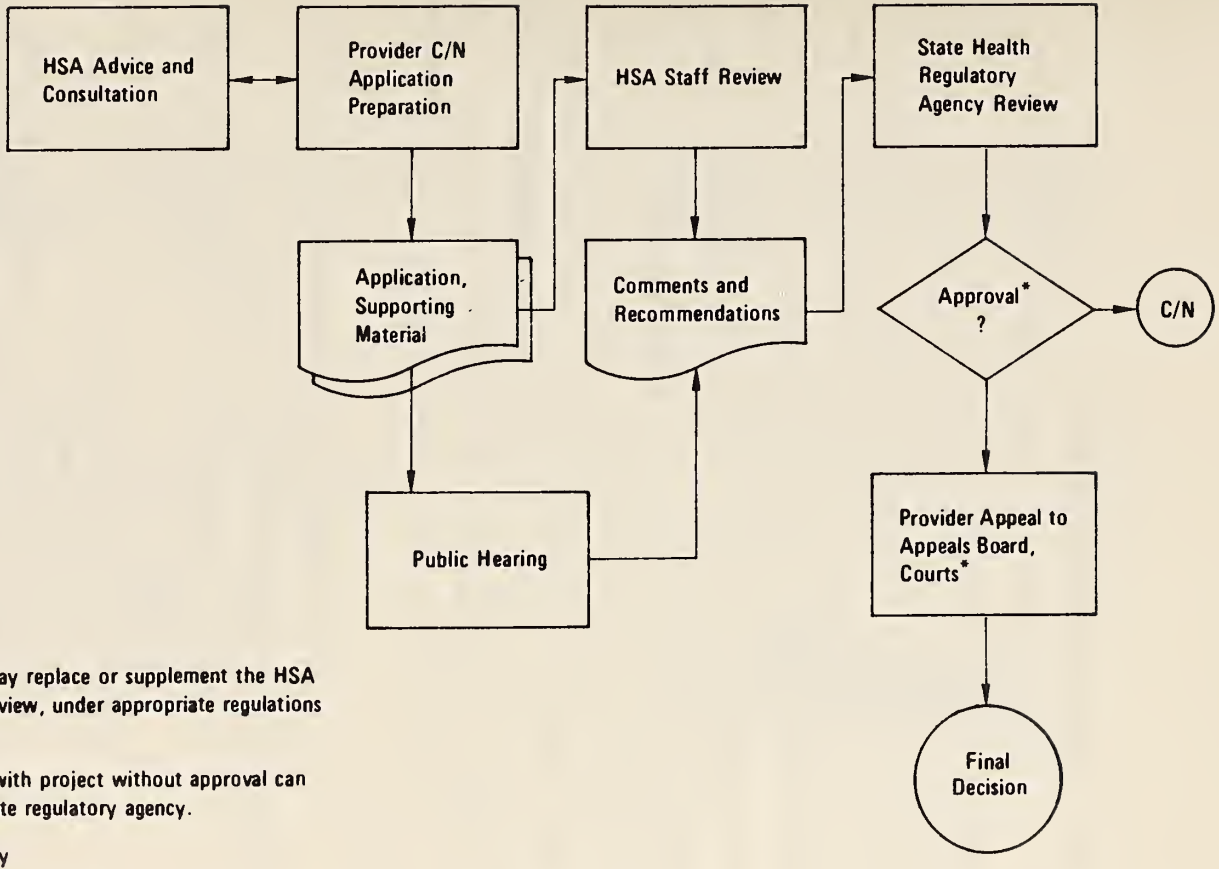
[**] Lewin and Associates, Inc., Ibid., p. 61.

Authority for the two functions lies in separate agencies in at least ten other states, in six of which there is close cooperation in that either data is shared or the rate setting agency may require additional CES review.

The major steps involved in a "typical" direct CES (C/N) process are illustrated in Figure 3-2, which emphasizes the interface with PRS. The provider prepares and submits an application for C/N review; the review is carried out first at the area level by the Health Systems Agency (HSA) and subsequently by the State Health Council, Department of Public Health or Human Resources, and/or the Rate Setting Agency. The initial review is shown as basically a two-step process where the state agency weighs its own evaluation against the HSA recommendation. Variations in some states involve up to 4 or more "sub-reviews."

In any case, the interval from provider submission to a decision of approval or denial is commonly limited by statute to say, 12 months, though C/N reviews have been noted to exceed this period. In addition, the C/N proposal is generally subject to a public hearing, and a denial decision by the state agency with such authority may be appealed by the provider. Note that a provider can lose its license to operate if it goes ahead with its proposal without a C/N. The sanction for 1122 Review, by comparison, is weaker and entails a threatened loss of reimbursement.

Whether or not the rate setting agency takes part directly in CES review, the resulting certificate of approval (or denial) and the attendant back-up and justification are key inputs into PRS. It is possible, however, for the rate setting agency to deny or reduce reimbursement for specific service or capital expenditure changes which have otherwise been approved through CES review. PRS goes beyond CES also in that the former can reduce reimbursement on existing as well as new capital expenditures and services.


HSA Advice and Consultation
Provider C/N Application Preparation
HSA Staff Review
State Health Regulatory Agency Review
Application, Supporting Material
Comments and Recommendations
Approval* ?
C/N
Public Hearing
Provider Appeal to Appeals Board, Courts*
Final Decision

Note: Rate setting agency may replace or supplement the HSA and/or state agency review, under appropriate regulations and authority.

*Provider decision to go ahead with project without approval can lead to denial of license by state regulatory agency.

HSA = Health Systems Agency
C/N = Certificate of Need
CES = Capital Expenditures and Services

Figure 3-2. Steps in a Typical Capital Expenditure and Service (CES)or Certificate of Need (C/N) Process

3.2.1.3 State and Area Planning

In accordance with recently enacted legislation*, the major functions of the Health Systems Agencies (HSAs) at the area level, and of the State Health Planning and Development agencies at the state level, are to 1) implement national health goals, programs, and legislation (particularly P.L. 93-641); 2) allocate health development funds (both public and private) through participation in CES reviews; 3) provide a focal point for public participation and education in health issues and programs; 4) conduct research, including data collection, analysis, and documentation; and 5) plan for availability, delivery, and utilization of health services. (The latter function involves interaction with other pertinent agencies such as rate setters, Professional Standards Review Organizations (PSROs), state hospital associations, state health regulatory agencies, and consumer groups.) These functions are illustrated in Figure 3-3.

A typical planning agenda consistent with current national policies and guidelines might be as follows:

- improve primary care services for the medically indigent;
- train and utilize physicians' assistants (e.g., nurse practitioners);
- consolidate existing institutional services, maximizing complementary and minimizing duplicative services;
- educate the public regarding personal and preventive care, and other health matters;

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*Public Law 93-641; see Section 2.2.1.3.

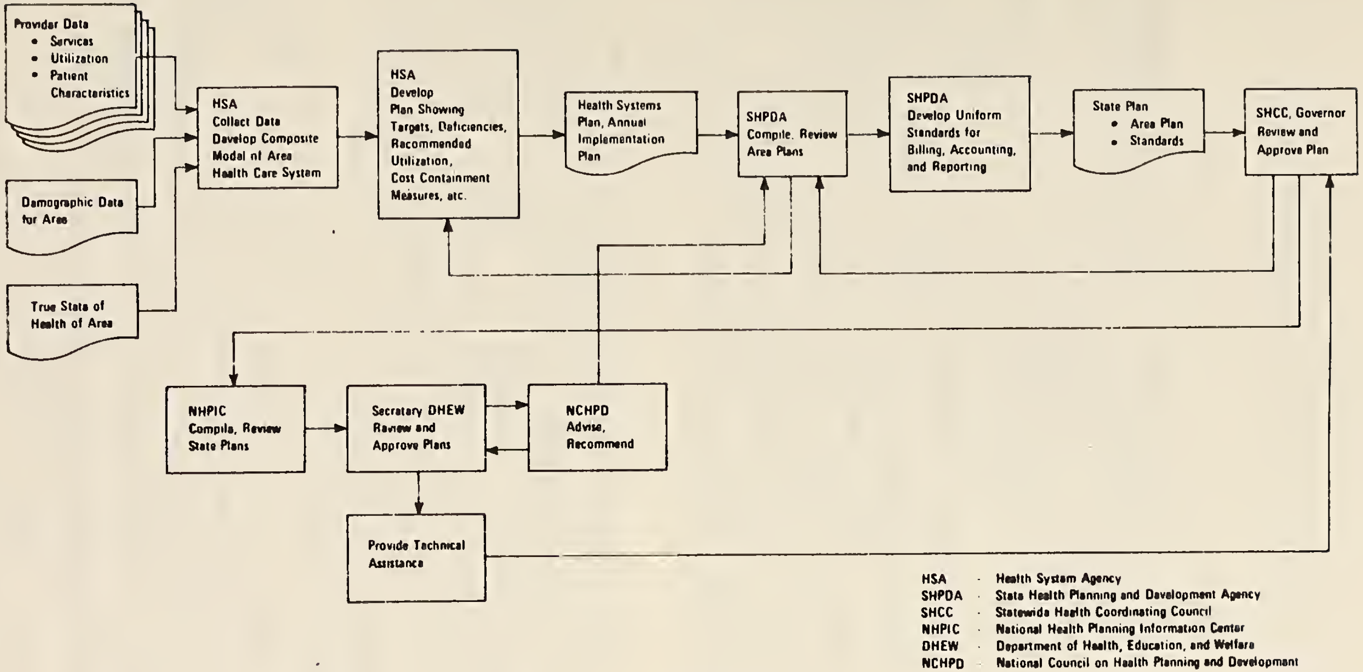
Provider Data
• Services
• Utilization
• Patient Characteristics
Demographic Data for Area
True State of Health of Area
HSA
Collect Data
Develop Composite Model of Area Health Care System
HSA
Develop
Plan Showing Targets, Deficiencies, Recommended Utilization, Cost Containment Measures, etc.
Health Systems Plan, Annual Implementation Plan
SHPDA
Compile, Review Area Plans
SHPDA
Develop Uniform Standards for Billing, Accounting, and Reporting
State Plan
• Area Plan
• Standards
SHCC, Governor
Review and Approve Plan
NHPIC
Compile, Review State Plans
Secretary DHEW
Review and Approve Plans
NCHPD
Advise, Recommend
Provide Technical Assistance
HSA - Health System Agency
SHPDA - State Health Planning and Development Agency
SHCC - Statewide Health Coordinating Council
NHPIC - National Health Planning Information Center
DHEW - Department of Health, Education, and Welfare
NCHPD - National Council on Health Planning and Development

Figure 3-3. Functions in National Health Planning

- develop neighborhood health centers, medical group practices, HMOs, and other innovative systems or arrangements;
- introduce more cost-effective health programs.

In carrying out the provisions of P.L. 93-641, the area agencies, and in turn the state agencies, identify health needs, establish priorities, define specific goals, and recommend changes in the existing health system to achieve goals. The HSAs develop Health Systems Plans (HSPs) which become components of the State Health Plan and relate closely to the agenda outlined above.

Data used for research and general planning purposes by HSAs include: data on types and numbers of providers; maternity, pediatric, and ambulatory care data and studies; provider statistical (cost and utilization) and planning information, including costs for specific services; demographic and economic trend data; interviews with citizens, public officials, and health professionals; and area norms, standards, and profiles.

Much of this information is currently difficult to obtain in consistent terms, particularly in light of the general lack of uniformity (with some exceptions) in provider reporting systems. There is a major functional interrelationship between planning and rate setting which requires, at a minimum, a fairly regular exchange of ideas, analyses and study results, and cost, utilization and other data. A common data base would benefit both functions.

3.2.1.4 Functions of Professional Standards Review Organizations (PSROs)

The basic function of a PSRO is to ensure that health care services under Medicare and Medicaid are of acceptable quality and are provided only when necessary and in an economical manner. Since PSROs are not directly involved in determining reasonable charges for Medicare, it is unlikely that they would take part directly in prospective rate setting (PRS). Nevertheless, it is important that the quality of care not suffer as providers adjust to pressures by PRS to contain costs. PSROs, which can monitor both practitioners and institutions, have the potential to effect a downward influence on medical costs at the "ground level"-- that is, to limit unnecessary admissions or services, to avoid excessive lengths of stay, and to ensure adequate yet cost-effective diagnostic procedures and types of care.

Specific functions which interface with PRS occur at the regional PSRO, State Council, and National Council levels. The National PSRO Council (1) prepares and disseminates regional norms of care and treatment, with periodic revisions based upon review of pertinent data; (2) provides technical assistance in the utilization of these norms; and (3) reviews the comparative performance and effectiveness of State Councils and PSROs. Relevant State Council functions are (1) disseminating information and data among PSROs in the state, and coordinating their activities; (2) assisting the Secretary of DHEW in the development of uniform data gathering procedures to insure efficiency and objective comparisons; and (3) reviewing PSRO decisions involving more than $100.

In discussing PSRO functions, both in general and as they relate to PRS, a careful distinction must be made between (a) those functions with which PSROs are specifically charged by legislation and general directives or guidelines, and (b) the rather important role which these functions can play in terms of cost control and upgrading the quality of care with exercise of sufficient determination and resources. This distinction is emphasized because the latter is so closely related to effective PRS, whether carried out by PSROs or other agencies, and because the role that will evolve for PSROs from their designated functions is as yet unclear. The principal interfacing functions are: 1) determination of the medical necessity and appropriateness of hospital admissions particularly for extended or costly treatment; 2) regular review of profiles of care for selected patient groups and providers; 3) monitoring and planning in the application of length-of-stay criteria derived from regional norms based on patient age groups and diagnostic categories; and 4) notification of the State Council, the provider (allowing opportunity for further review), and the pertinent intermediary, regarding any disapproved services or violations of obligations under PSRO review on the part of the provider. It is clear that these types of information are also required by the rate setting agency. Any beneficiary or receiver of services may request a review by a PSRO. The PSRO decision may be appealed to the State Council in cases involving more than $100. For such cases, the State Council decision can, in turn, be appealed to the Secretary of DHEW, and the Secretary's decision is subject to subsequent judicial review for cases in excess of $1,000. Providers have a similar appeal route culminating with judicial reviews, for cases involving exclusion from the Professional Standards Review Program or requiring repayment. Again, the PRS staff should be aware of such proceedings and their outcomes.

As an ongoing component of its review the PSRO may compute and monitor statistical indices at the regional level, based, for example, on the cost and utilization of institutional and ambulatory care; the distribution of diagnoses; and mortality, known morbidity, and maternal and perinatal mortality figures. The types of centralized regional data required for such analyses are closely related to the information requirements of the Health Systems Agencies as well as the rate setting agencies. Although PRS is less directly concerned with medical data per se, the statistical and quality-of-care indices, and other measures of effectiveness, can be of direct interest in certain rate setting approaches. Thus, PSRO reports can be useful to rate setters in group comparisons and in evaluation of provider cost-effectiveness relative to regional norms and standards.

3.2.2 Relevant Purchaser Functions

As defined in Chapter 2, bulk purchasers of health care or third party payors include both insurance carriers (government and private) and public assistance agencies. As also indicated in that chapter, purchaser functions are carried out in part by the "parent" organization (e.g., the SSA Bureau of Health Insurance for Medicare), and in part by designated agents or intermediaries. The PRSIS is concerned with the relevant functions of both insurance and public assistance programs, whether carried out by the parent organization or delegated.

The bulk purchaser functions of greatest relevance here are interactions with enrollee groups and individuals, and interactions with providers. In the former category are functions like negotiating group contracts, enrollment, and keeping enrollee records. In the latter category are negotiating contracts and rates with providers, and reimbursement of providers for services rendered.

3.2.2.1 Interactions with Enrollee Groups and Individuals

A formal contract or some other type of agreement is required to document financial and other arrangements. With group enrollment (particularly for private insurance) there is generally a contract between the carrier and the group (e.g., employer or association) as well as one between the carrier and the individual enrollee. The contract with the group may be rather complex: included in it are the benefit structure, maximum limitations of coverage, payment channels, quality and type of service (i.e., whether the purchaser or group performs certain administrative tasks, how rapidly reimbursement occurs, etc.), and a risk-bearing agreement. Three degrees of risk-bearing agreements can be made with the carrier. First is a prospective fixed-price contract that entails no risk for the group: the purchaser pays whatever bills are submitted regardless of the aggregate amount. Second, a contract may involve reduced premiums to the group which then shares the risk. An example is an agreement under which the purchaser pays benefits up to a percentage of total yearly premiums paid and the group must pay the excess. A third arrangement is one in which the group bears the entire risk and the carrier merely does the clerical work.

The contract characteristics affect the amount of premiums due. In addition, an experience rating assigned to the group by the purchaser may influence premium levels. A variety of risk characteristics is applied to the group to determine its experience rating, which, relative to other groups, affects premium levels. Group rating is generally used by commercial insurance carriers. The alternative approach is community rating, in which group subscriber premiums are distinguished only in terms of family size. This method is used by Medicare, Blue Cross/Blue Shield, and HMOs.

Providers and purchasers may also enter into contractual agreements. These arrangements, which are independent of particular group insurance plans, establish the rates which participating providers may charge enrollees. Contractual agreements are also entered into by qualified HMOs and particular purchasers, such as Medicare. These agreements establish reimbursement programs available to the HMO. In this situation the HMO acts as a provider.

An outgrowth of contract negotiation is the enrollment function. Individuals and members of the group must enroll and be informed of their coverage. Enrollment involves the individual directly. Generally, the transaction is between the group, rather than the purchaser, and the individual. Occasionally, the individual must meet specific eligibility criteria (e.g., good health, maximum age).

The enrollment process is integrally tied to the purchaser's information system. All purchasers must keep detailed records identifying enrollees, their type of coverage and duration of coverage. Many purchasers also keep data on the claims processed for each enrollee. This information can be valuable in setting rates, developing benefit plans, and evaluating groups for their experience rating.

3.2.2.2 Interactions with Providers

The interactions of bulk purchasers with providers may involve negotiating contracts (including setting rates to be paid) and making reimbursements in response to bills submitted by either the provider or the enrollee.

The rate setting aspect of bulk purchaser/provider contracting requires some comment. It is the single purchaser-oriented counterpart of the rate setting function discussed above in Section 2.2.1, which was mostly state-oriented, and was meant ultimately to apply to all purchasers. The single purchaser-oriented rate setting predates the other type, but presumably will in time be replaced by it.

Purchasers use a wide range of techniques to set reimbursement rates, although most rely on retrospective costs. (Often there is a difference in the methods used by purchasers if the in-patient and out-patient insurance plans are distinct.) Two well-known methods are the Medicare supplementary insurance system of reimbursement of "reasonable charges", and the "usual, customary and reasonable fee" approach, both of which utilize yearly actual charges. The terminology varies, but the approaches are similar: to set maximum rates based on most frequent charges of individual providers, and similar providers, often with geographical weighting.

To develop rate schedules, the purchaser must collect data on provider fees, through either pre-filing of claims by providers or retrospective claims reviews. Over time, physicians may increase their rates to meet average fees, thereby escalating the costs to the purchaser. These methods may be inequitable if the dispersion of actual charges is large, but if it is small, they may be satisfactory. In addition, these methods do not evaluate charges according to variations or complexities of the particular service provided, therefore sometimes penalizing providers.

Another rate setting method (developed by Blue Shield) used by purchasers for out-patient services is to set a uniform fee schedule. Under this contractual arrangement, the provider may not bill patients below a specified income level for unallowable charges, thereby potentially increasing charges to middle and upper income enrollees.

The use of relative value schedules can make cost reimbursement rates more equitable. By establishing relative values of procedures within a service, services can be differentiated and paid for according to the procedures used. This method, however, involves more costs for the purchaser who must establish schedules as well as process claims.

For programs such as Medicare, which determine reimbursable rates for hospitals and out-patient services on different bases, rate setting agreements with hospitals tend to be more complex. Reimbursement is generally between the provider and purchaser. The major purchaser plans (Medicare, Blue Cross, Medicaid) all base their rate setting on provider costs; however, their accounting methods vary.

Frequently the ratio of a particular plan's charges to total charges is applied to department costs to determine rates. This method requires detailed provider reporting. Some disadvantages are that the provider may manipulate the charges, and that efficiency incentives are not built into the process. Because the variations in reimbursement may, in effect, force providers to charge other purchasers for uncovered costs, purchasers frequently review claims closely and audit the providers' records. These tasks increase the purchaser administrative costs significantly.

Reimbursement comprises a number of activities including the prior approval of charges, billing, claims review and payment. Most providers require assurance that a patient has some form of health insurance early in the treatment process. Frequently the presentation of identification cards and reimbursement request forms, and, in the case of Medicare, inquiries to intermediaries, occur concomitantly with admission. These measures also serve to determine whether the patient has met his deductible and coinsurance requirements.

With the exception of HMOs and Title V clinics, which do not bill for services*, the billing of purchasers is done in one of two ways, as seen in Figure 3-4. In both cases, the same form is usually completed by both the provider and patient. Providers of in-patient care generally submit bills directly to the purchaser under the assignment method. Depending upon how well details of the purchaser program is known, patients may be billed for the coinsurance and deductible simultaneously or not until after the purchaser has notified the provider of acceptance of the claim (which, of course, entails a time delay). Certain plans, including public insurance and assistance plans and Blue Cross/Blue Shield, prohibit the providers from requesting payment from the patients for the difference between allowable and nonallowable charges.

The alternative billing procedure is for the provider to bill the patient directly. The patient subsequently submits the bill to the purchaser for reimbursement. The provider can receive payment for the entire bill, although the patient may receive reimbursement for only the allowable charge.

In the cases of CHAMPUS, Medicare, and occasionally Medicaid, requests for reimbursement are made to intermediaries and carriers. The carriers assess the requests and make payments for the government, which then reimburses them or establishes a fund from which they draw.

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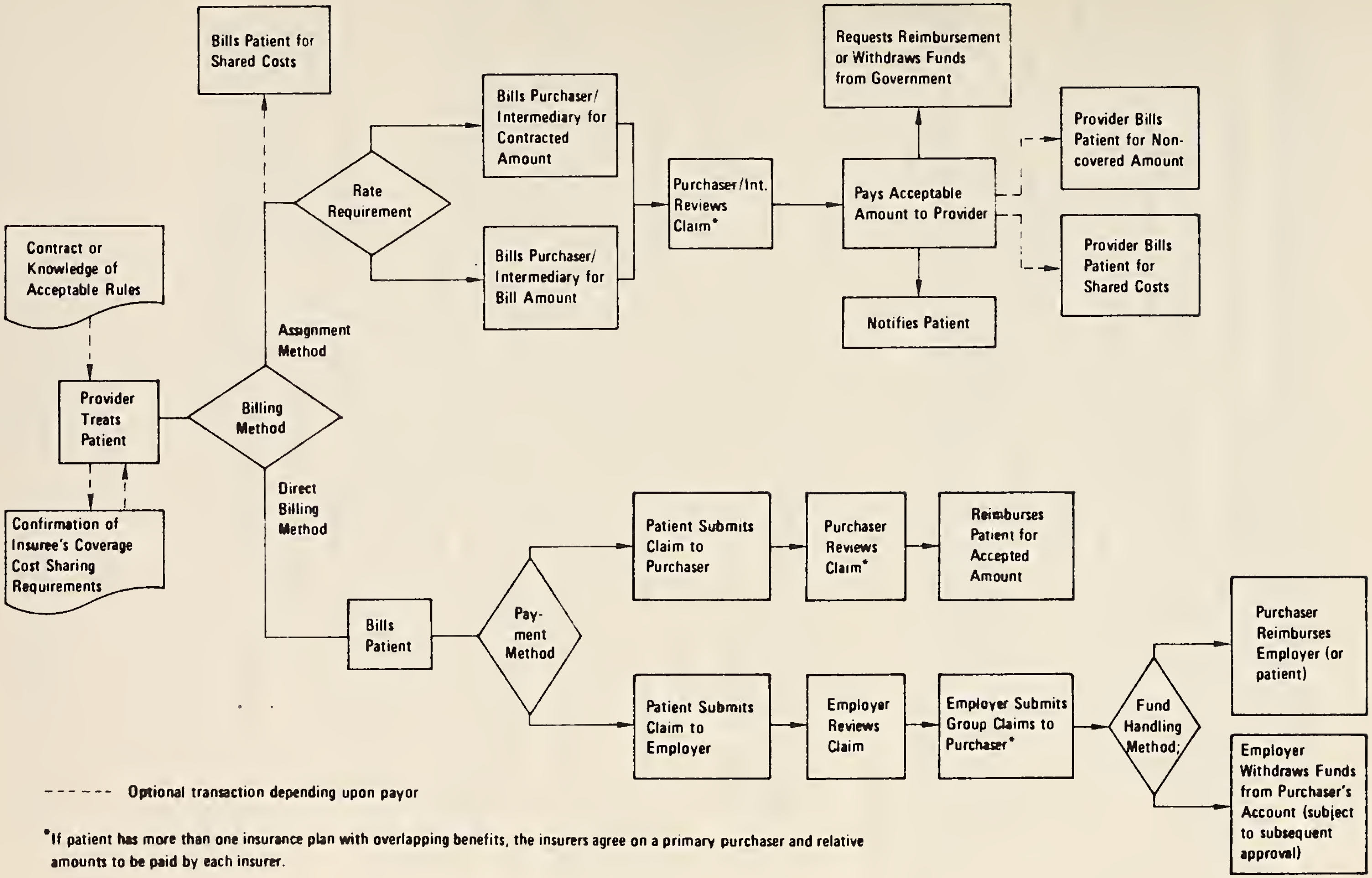
*They may do some Medicaid billing for those clients who are eligible.


Contract or Knowledge of Acceptable Rules
Provider Treats Patient
Confirmation of Insuree's Coverage Cost Sharing Requirements
Billing Method
Assignment Method
Direct Billing Method
Bills Patient for Shared Costs
Rate Requirement
Bills Purchaser/ Intermediary for Contracted Amount
Bills Purchaser/ Intermediary for Bill Amount
Purchaser/Int. Reviews Claim*
Pays Acceptable Amount to Provider
Requests Reimbursement or Withdraws Funds from Government
Notifies Patient
Provider Bills Patient for Non-covered Amount
Provider Bills Patient for Shared Costs
Bills Patient
Pay-ment Method
Patient Submits Claim to Purchaser
Purchaser Reviews Claim*
Reimburses Patient for Accepted Amount
Patient Submits Claim to Employer
Employer Reviews Claim
Employer Submits Group Claims to Purchaser*
Fund Handling Method;
Purchaser Reimburses Employer (or patient)
Employer Withdraws Funds from Purchaser's Account (subject to subsequent approval)
------ Optional transaction depending upon payor

*If patient has more than one insurance plan with overlapping benefits, the insurers agree on a primary purchaser and relative amounts to be paid by each insurer.

Figure 3-4. General Billing and Reimbursement Procedure for Third Party Payors

Under reimbursement, a variety of measures can be taken to reduce administrative costs and unnecessary utilization by sharing costs with the patient. Also used are coinsurance, in which a patient must pay a certain percentage of his care, and co-payment, in which the patient must pay a fixed sum per bill. An indemnity schedule may be set for reimbursing the patient a sum which is less than full payment for services received. In private plans, these measures are frequently a function of the premium levels a group is willing to pay. In addition, if there is overlapping coverage by multiple policies, insurors will seek to share the cost.

3.2.3 Relevant Provider Functions

The provider functions that are of interest here may conveniently be divided into two general classes. First, there are functions that deal with the institution as a whole, and with its activities and departments. These can be related to an annual cycle of budgeting, accounting, and related activities. Second, there are functions associated with individual patient cases. These are completely unrelated in timing to the first set: rather, the case-oriented functions are triggered by service events such as admissions, discharges, or outpatient visits.

The discussion of provider functions will largely be based on hospitals. Nursing homes have budgeting, billing and other functions that are similar in structure to those of hospitals, but generally deal with fewer accounts, and somewhat different account classifications.

3.2.3.1 Functions Associated with Annual Budget Cycle

Under this heading, accounting, budgeting, reporting, and PRS and CES proposal preparation will be discussed. Within the general subject of budgeting, two topics will be given special attention -- statistics and cost finding.

a. Accounting

A chart of accounts is an essential prerequisite to budgeting procedures. The American Hospital Association defines a chart of accounts as "a listing of account titles, with numerical symbols, employed in the compilation of financial data concerning the assets, liabilities, capital, revenues, and expenses of the institution".* The data classification pattern reflected by the chart of accounts should correspond to the divisions of responsibility within the institution.

The extent to which the accounts may be categorized depends upon both the amount of detail considered necessary for control and the variety of activities in a department. Departments may be subdivided in larger hospitals to provide sufficient detail to show the responsibility of supervisors or combined in smaller hospitals when the variety of activities does not justify separation.

Many hospitals base their chart of accounts on the suggested chart outlined in the American Hospital Association's 1966 Chart of Accounts.** The numerical coding system used in the AHA's chart of accounts employs five digits. (Larger hospitals may need additional digits, depending on the amount of data required.)

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*American Hospital Association, Chart of Accounts for Hospitals (Chicago, Illinois: 1966), p. 25.

**The first edition of the AHA chart of accounts appeared in 1922. There have been many revisions since, including a 1975 version still being worked on.

Account numbers include three digits to the left of a decimal point, which identify primary account classifications, and two digits to the right, which identify secondary account classifications. Each of the digits has a specific meaning. For example, in the 1966 chart any account beginning with the digit "1" identifies an asset account. Accounts 130-132 denote the endowment fund. Accounts 131.00-131.79 cover investments; 131.00-131.09, bank savings accounts, and so forth.*

Operational expenses (with beginning digits 6 through 9) are classified by activity or department (i.e., cost centers), as direct patient services, and supporting services, much as shown in Table 3-I at the beginning of this chapter. Non-operating, or unassigned expenses (also with initial digit 9) include such categories as depreciation, insurance, taxes and interest.

The numbering system as well as the accounts may differ from the AHA's in a hospital that has developed its own chart. Many nursing home charts of accounts are based on the AHA's, with non-applicable categories (e.g., operating room) removed.

Some states, for example, California and Washington, have developed their own charts of accounts to be used by all hospitals. The charts are similar to the AHA 1975 chart, but use a different numbering system. Other states (e.g., Maryland) have developed suggested reporting systems for hospitals.

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*Ibid, p. 46.

A central issue in hospital accounting is responsibility vs. functional accounting systems. Responsibility accounting involves collecting costs by organizational units such as departments. This is useful for evaluating managerial performance; but different hospitals may have different organizational structures. Functional accounting involves collecting costs by type of activity, and is suitable for making comparisons between hospitals. It is therefore necessary for some kinds of rate setting. Because of these differing requirements, hospitals may have to prepare their budgets in two different forms.

b. The Master Budget and Its Components

The budgeting process is essential to the planning, management and operational control of the provider institution and the budget (with supporting materials) constitutes the major document used in rate setting.

The master budget consists of three component budgets which may be supplemented by other financial estimates or forecasts. These components are the _operating budget_, which is an accumulation of estimates of operating expenses and revenues and their anticipated results for the budget period; a _plant and equipment_ (capital) _budget_, which contains data for fixed assets that are to be acquired during the period; and the _cash budget_, which is an accumulation of estimates of working capital requirements and sources of funds for the period.

c. The Operating Budget

The operating budget may in turn be divided into four parts: "statistics" on the estimated volume and mix of activities, estimates of expenses, cost allocation and calculation of proposed rates and estimates of revenues. A few remarks will be made about each part of the budget, highlighting those aspects that are special to health care institutions.

The material in this Section is based primarily on relevant manuals published by the AHA, the California Hospital Association, et al, and the Washington State Hospital Commission.*

The statistics portion of the operating budget defines expected volumes of work for both all direct patient service activities and all indirect activities. The units of measure depend upon the type of activity. The statistics characterize expected service levels during the budget year, and are a pre-requisite to the estimation of expense and revenue dollars. Table 3-V shows a unit of measure that has been used for each of several selected provider activities.

Estimates of operating expenses are prepared for each department, or activity, by object of expense -- salaries and wages, services, supplies, etc. In the average hospital, personnel cost represents about 60% of the total expense budget. For each activity, the staffing requirements and expense level are determined from the appropriate service volume statistic. The results can be summarized in terms of an expense budget. An example of an operating expense budget for a short-stay general hospital is given in Table 3-VI. To make it less a function of hospital size, expenses are given only as percentages of the total operating expense.

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*American Hospital Association, Budgeting Procedures for Hospitals, Chicago, Illinois, 1971.
American Hospital Association, Cost Finding and Rate Setting for Hospitals, Chicago, Illinois, 1968.
California Hospital Commission, Accounting and Reporting Manual for California Hospitals, January 1974.
Washington State Hospital Commission, Accounting and Reporting Manual for Hospitals, Olympia, October 1974.

TABLE 3-V

EXAMPLE OF PROVIDER STATISTICAL UNITS OF MEASURE FOR SELECTED ACTIVITIES

(For short-stay general hospitals)

REVENUE GENERATING SERVICES	Illustrative Unit of Measure
Routine (Nursing) Services	
● General Medical and Surgical	patient days
● Intensive care	patient days
Special Services	
● Nursery	patient days
● Operating room	patient minutes
● Central supply room and medical supplies	line items sold
● Emergency service	visits
● Laboratory	relative value units*
● Radiology	relative value units*
● Respiratory therapy	treatments
● Home care service	patient contacts
SUPPORT SERVICES	
Patient-Oriented	
● Dietary	patient meals
● Social service	personal contacts
Operation and Maintenance	
● Operation of plant	gross square feet
● Housekeeping	hours of service
Administrative & Financial	
● Credit and collection	gross patient revenue
● Personnel	full-time equiv. employees

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*Relative Value Units, established by the applicable professional groups, measure the relative amounts of effort required for each distinct service procedure.

TABLE 3-VI

EXAMPLE OF PROVIDER EXPENSE BUDGET

(For short-term general hospital)

REVENUE GENERATING SERVICES	
Routine (Nursing) Services	23.8%
• General Medical and Surgical	19.0
• Intensive care, Coronary care, Progressive care	4.8
Special Services	34.6%
• Nursery	1.3
• Operating, Recovery, Delivery Rooms	5.4
• Central supply room and medical supplies	1.6
• Emergency Service	2.1
• Laboratory	8.1
• Radiology	6.1
• Nuclear Medicine, Respiratory Therapy, etc.	8.3
• Physical Therapy, Home Care Service	1.7
SUPPORT SERVICES	
Patient-Oriented	7.9%
• Dietary	5.0
• Social Service, Admitting, etc.	2.9
Operation and Maintenance	11.6%
• Operation of Plant	4.4
• Maintenance, Housekeeping, etc.	7.2
Administrative & Financial	22.1%
• Fiscal Services, Credit & Collection, etc.	5.4
• Admin. & General, Personnel, etc.	16.7
TOTAL EXPENSES	100.0%

The next section of the operating budget may be called cost allocation and calculation of proposed rates. Before the rate implications of the expense budget can be determined, it is necessary to apportion or allocate the costs of the non-revenue producing centers (i.e., the supporting activities or services) to each other and to the revenue producing cost centers (i.e., the direct patient service activities). The allocation, which is called cost finding, is made on the basis of the relative amounts of service that a cost center renders to other cost centers. The pattern of inter-cost center support may be expressed as a rectangular array of statistical coefficients. Four different methods of cost finding are summarized in Table 3-VII. Once the cost finding has been completed, the proposed rates may be calculated. It should be noted that some activities each provide more than one service and hence require more than one rate.

Estimates of revenue for operating budget purposes may be obtained from estimates of statistics or volumes of service to be rendered. In preparing the budget it is necessary to estimate revenue for each of the general categories of services to patients -- routine (nursing) service to inpatients, routine service to outpatients, special services (e.g., operating room, radiology) to inpatients, and special services to outpatients. It is usually the responsibility of the heads of departments supplying routine services to estimate revenue for each month of the budget year using data supplied by the accounting department. These estimates are most commonly based on a comparison between the number of patient days for each month of the current year and estimated number of patient days for each month of the budget year. Revenue from special service activities is usually estimated on a monthly basis for each type of service rendered. Miscellaneous revenue, that is, revenue from sources not directly

TABLE 3-VII

BASIC METHODS OF COST FINDING

1. Direct Allocation. In this method, costs of the nonrevenue centers are allocated only to revenue centers even though most nonrevenue centers also provide services to each other.

2. Step-Down. In the step-down method, costs of nonrevenue centers are allocated to both revenue and nonrevenue centers. Once the costs of a nonrevenue center have been completely allocated to other centers, that center is considered closed and cannot receive further cost allocations from other centers. The sequence in which nonrevenue centers are closed is vital. Clearly, the first center to be closed should be that center that gives the greatest amount of service to the greatest number of centers and receives the least amount of service from the fewest number of centers. The last center to be closed should be the center providing the least service and receiving the greatest amount.*

3. Double Distribution. This method also recognizes the fact that nonrevenue-producing centers provide service to revenue and nonrevenue centers alike. Unlike the step-down method, however, nonrevenue centers are not considered closed after their costs have been allocated. They are still open to receive allocations from other nonrevenue centers. Consequently, additional rounds of cost allocations are necessary to close all nonrevenue accounts.

4. Matrix Inversion or Simultaneous Equations. This method involves either inverting a matrix of N rows and N columns, or solving a set of N simultaneous linear equations. Here N is the number of nonrevenue producing centers. The result is the same as that achieved by an infinite number of rounds of cost allocations in Method 3.

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*Detailed procedures can vary considerably. Thus, within the general class of step-down methods, the Bureau of Health Insurance defines two procedures for Medicare providers, a regular one, and (primarily for institutions of less than 100 beds) a simplified one.

related to service to patients (e.g., gifts, grants, bequests, income from endowment and other sources) must also be estimated and included in the revenue budget. Finally, deductions from revenue (e.g., contractual losses, bad debts, free care) must also be estimated.

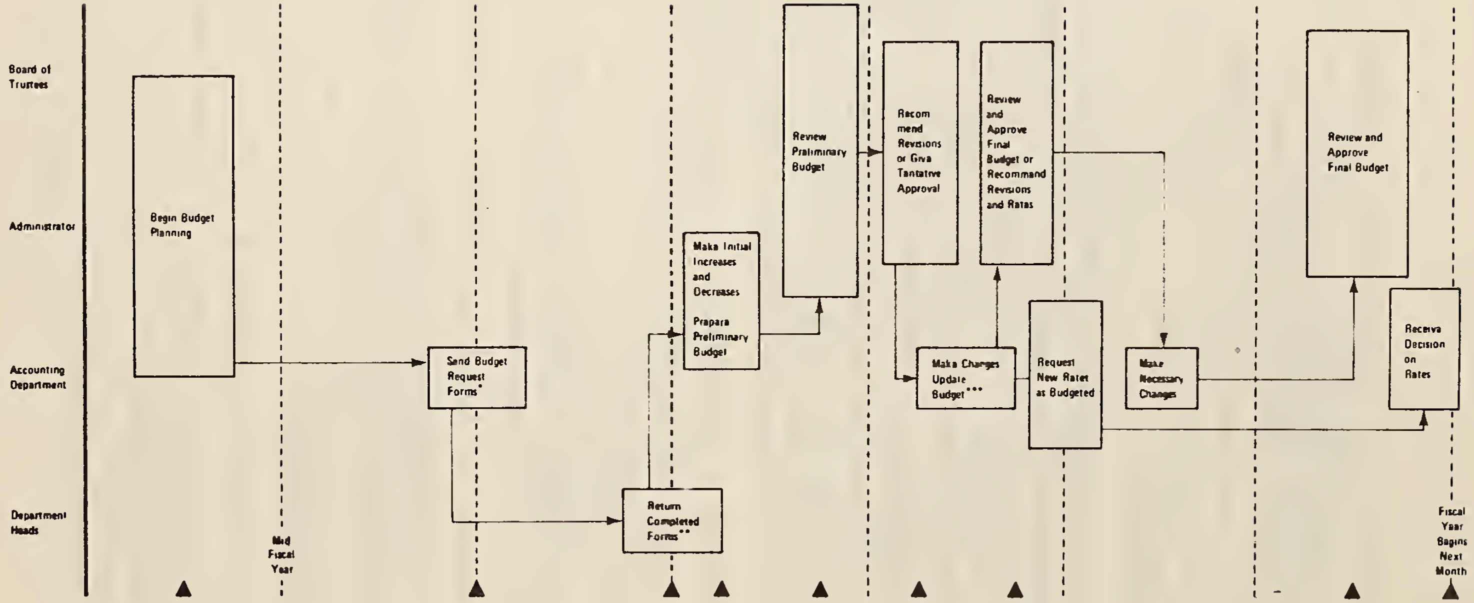
d. Other Budgets

The plant and equipment budget consists of estimates of the costs and determination of the source of funds for replacements, improvements and additions to fixed assets. The 1972 amendments to the Social Security Act requires each provider of services, as a condition of participation under Medicare, to have, in addition to a written annual operating budget, at least a three-year capital expenditures plan, the first year of which is the year to which the operating budget applies. The plant and equipment budget is also an important supporting document in determination of need programs and other formal programs for seeking approval of proposed capital expenditures and changes in service (CES).

The cash budget is an estimate of working capital requirements. It consists of the beginning cash balance and estimates of receipts and disbursements for the budget period. Cash required for operations, fixed assets and long-term obligations is usually estimated separately and then summarized to reflect overall requirements.

e. The Budget Cycle

A similar cycle of budgeting functions or tasks is followed by most hospitals and nursing homes. A typical budget cycle for a hospital is described in Figure 3-5.


Board of Trustees
Administrator
Accounting Department
Department Heads
Begin Budget Planning
Mid Fiscal Year
Send Budget Request Forms*
Return Completed Forms**
Make Initial Increases and Decreases
Prepare Preliminary Budget
Review Preliminary Budget
Recommend Revisions or Give Tentative Approval
Make Changes Update Budget***
Review and Approve Final Budget or Recommend Revisions and Rates
Request New Rates as Budgeted
Make Necessary Changes
Review and Approve Final Budget
Receive Decision on Rates
Fiscal Year Begins Next Month

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*Supplementary statistical data usually includes actuals for the previous year and for the current year, 6-month actuals and 6-month estimates.

**Required supplementary material usually includes detailed estimates of expenses and revenues, a detailed personnel listing and capital equipment requests.

***The updated budget reflects 9-month actuals, 3-month estimates.

SOURCE: This flow diagram is based on conversations with community hospital administrators and controllers.

Figure 3-5. A Typical Hospital Budgeting Cycle

It should be pointed out that there is no standard fiscal year for all hospitals and nursing homes. According to the American Hospital Association, approximately 57 percent of the nation's hospitals use October as the first month of the reporting period, approximately 26 percent use July, and every other month of the calendar year commences a fiscal year for some hospital.* In some states, the fiscal year begins on the same date for all hospitals (e.g., Massachusetts, 1 October); in other states, different hospitals use different fiscal years. (In the State of Washington, for example, there are 11 fiscal years in use among hospitals, although most begin 1 January or 1 July).

When the rate setting process is based on peer group comparisons, such comparisons are, of course, difficult to make among institutions using different budget years. Another type of problem occurs in states having a single fiscal year but whose rate requests for the budget year must be submitted to the rate setting commission before the budget is approved by the provider board of trustees (or board of directors). For example, in Massachusetts, hospitals are required to submit rate proposals to the Rate Setting Commission before 1 August but the budget may not be approved until early September. Furthermore, this budget is based on estimates, not actuals, for the final quarter of the current fiscal year.

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*For hospitals registered with the American Hospital Association in 1969 the first month of the fiscal year was as follows: Jan., 5.3%; Feb., 0.1%; March, 0.2%; April, 1.3%; May, 1.0%; June, 1.1%; July, 25.9%; August, 0.8%; Sept., 1.8%; Oct., 57.4%; Nov., 2.2%; Dec., 0.6%.

Source: Hospitals, Journal of the American Hospital Association, XLIV, No. 15 (August 1, 1970), p. 470.

f. Reporting

Internal reporting provides feedback of operational data to supervision and management; external reporting gives visibility to the provider's activities and finances and is required by various outside agencies for statistical and control purposes.

The major type of internal report is a (usually) quarterly budget report from the accounting department to each department head comparing actual expenses, revenues, and service statistics with budget. It is customary to show a year-to-date summary in each category as well itemizations for each month in the reporting period. Similar reports are also sent to administrators and directors as required. These reports are important in determining whether changes in rates may be required. Since there is usually a delay between the date of request for changes in rates and the effective date (e.g., in Massachusetts a request for a rate change must be filed 60 days before the proposed effective date), advance notice of situations requiring rate changes is important to the institution.

There are many types of external reports, both statistical and financial, required of provider institutions. The major reports include the institution's annual report published at the end of the reporting year, annual cost and statistical reports submitted to state health departments, periodic cost reports sent to the rate setting agencies, periodic reports to the U.S. Depts. of Labor and Commerce, and the annual Medicare cost report. In addition, expenditures and activity under Title XIX must be reported to state welfare departments to aid the states in preparation of monthly, quarterly, and annual Medicaid reports. The reporting periods are the calendar year and several fiscal years, depending upon the recipient of the reports. Different recipients often require different allocations of costs.

An illustrative budgeting and reporting year is shown in Table 3-VIII. For the sake of concreteness, the financial year for a community hospital in the Commonwealth of Massachusetts is shown. The hospital fiscal year begins 1 October for all hospitals in Massachusetts.

g. PRS and CES Proposal Preparation

A provider rate submission to a PRS agency may involve large quantities of information, particularly if the PRS review methodology is based on detailed budgetary data. In such a situation, required documentation may include all components of the master budget defined earlier: operating budget, in four parts; plant and equipment budget; cash budget.

Preparation of such a request will be time-consuming, especially in an institution whose chart of accounts is different from that specified by the rate setting agency. Another complexity is the fact that the rate request for the budget year may be required before the budget has internal approval (see "The Budget Cycle" above).

Budgeting requires reviewing institutional objectives, projecting possible changes in demand for services and planning for new or modified services and facilities. In addition, if subject to CES review, the provider must prepare a formal application to cover capital expenditures and changes in the number of beds or services offered. While the forms vary from state to state, the CES application usually deals with a description of the nature, scope and location of the project; a description of the applicant's existing health care facility (if any); the estimated range of capital expenditures required for the project; the proposed method of financing and an estimated range of anticipated finance charges (if any); a

TABLE 3-VIII

ILLUSTRATIVE HOSPITAL BUDGETING AND REPORTING ANNUAL CYCLE

(COMMONWEALTH OF MASSACHUSETTS)

	MONTHS												
	O	N	D	J	F	M	A	M	J	J	A	S	O
Budget Actions													
New Budget circulated to Department Heads	▲												▲
Budget planning begins						▲							
Department Heads get budget request forms								▲					
Budget requests returned to Accounting Dept.									▲				
Initial increases and decreases made									▲				
Preliminary budget with recommendations									▲				
Tentative aoproval of budget										▲			
Board of Trustees reviews budget										▲			
Budget passed											▲		
Rate Actions*													
Rate proposal due											▲		
Rate decision date													▲
Audit (by hospital firm) for previous year**	—	—											—
Fxternal Reports-Financial													
Annual state cost report				▲									
Annual Medicare cost report				▲									
Hospital fiscal year commences; annual report follows	▲			▲									▲
Quarterly cost report to Rate Setting Commission	▲			▲			▲			▲			▲
Quarterly reoort of capital expenditures to Dept. of Comm.	▲			▲			▲			▲			▲
External Reports -Statistical													
Annual Hosoital Statistical Report filed with Dept. of Health							▲						
Monthly report to Dept. of Labor- No. and types of employees		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Internal Reoorts													
Quarterly budget to Dept. Hds.	▲			▲			▲			▲			▲

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*In addition to the actions listed, rate requests may be submitted throughout the year, 60 days prior to the (proposed) effective date.

**Annual audits are also performed at random times by Medicare, the General Accounting Office (GAO), and the Rate Setting Commission (whose audit is accepted by Blue Cross).

description of the applicable service area and target population; and the proposed schedule for completion of the project, including the impact of the schedule on cost and financing.

3.2.3.2 Functions Associated with Individual Cases

The functions that are of interest here are utilization review, billing, and providing clinical case summaries or discharge abstracts.

a. Utilization Review (UR)

UR is in effect a limited form of professional standards review, carried out not by an external organization such as a PSRO, but by an internal organizational unit. UR may look at each inpatient admission in regard to certain factors, typically: whether admission to inpatient services, and the subsequent length of stay are justified by the initial diagnosis (or diagnoses) or by subsequent modifications to it (them). A PSRO may delegate some components of its review of an institution's cases to a suitably conducted UR function of that institution.

b. Billing

Institutional providers are reimbursed by a variety of third party payors -- Medicare, Medicaid, Blue Cross, commercial insurors, CHAMPUS, and Workmen's Compensation. The main institutional activities include querying payors concerning patient eligibility and submitting claims to third party payors and bills to patients. Many hospitals use computerized billing systems, often contracting with a state or area hospital association for the service.

Each third party payor has its own procedure for reimbursing the provider and its own reimbursement forms. In some cases, the third party payor uses more than one form (e.g., different forms for inpatient and outpatient services or for different plans). Billing procedures, from the point of view of the providers, are summarized in the following paragraphs.

In the case of Medicare, Blue Cross, commercial insurors, and CHAMPUS, the provider must bill the patient for coinsurance and deductibles, and non-coverage, if any. In the case of Medicaid and Workmen's Compensation, all of which are billed on a per diem rate (established by the state rate setting agency), the difference between the total charges and the actual bill is written off to an allowance account (a gain account if the bill exceeds the charges; a loss account if the charges exceed the bill).

Blue Cross and Medicare require the institution to receive approval to bill before the purchaser can be billed. Since there are several types of Blue Cross coverage, Blue Cross is billed at the rate specified on the approval.

Medicare pays the provider on a cost basis stated as a prespecified percentage of charges or as a per diem. Only the allowed percentage can be billed, the difference being placed in an allowance account. Blue Cross and Medicare reimbursement is hastened through a sight draft system in use at many institutions. Under this system, the provider writes its own checks and mails the completed billings to the payor.

Each Medicaid admission must be approved and monitored by a hospital pre-admission certification worker (e.g., Commonwealth Hospital Admissions Program (CHAMP) in Massachusetts) before billing can be done. The billing clerk must also determine whether the patient has any other type of coverage,as Medicaid will pay only after all other means of payment have been exhausted. After the representative has approved the bill, it is submitted to the local Medicaid claims control center for payment.

Each commercial insuror has its own specific billing form, usually furnished by the patient upon admission. The patient usually completes a portion of the form (supplying personal data) and the provider completes the remainder (showing types of services, charges, etc.) and mails the bill to the insuror or to the patient's employer. The types of commercial coverage are numerous and varied and the provider usually does not know the extent of coverage until payment or notice of non-coverage is received.

The CHAMPUS (Civilian Health and Medical Program of the Uniformed Services) program provides benefits for dependents of all servicemen. The billing procedure is the same as for commercial insurors, with the local Blue Cross office usually acting as the intermediary for CHAMPUS.

A sample bill is depicted in Table 3-IX. This illustrates the content (but not the format) of a bill that contains itemized charges.

c. Discharge Abstracts

Discharge abstracts, or clinical case summaries, are utilized by many providers that desire to obtain statistical characterizations of their case loads and profiles, or that wish to monitor quality, utilization and effectiveness. Many providers prepare such abstracts for use as inputs to computerized data services that process the data and prepare a variety of reports.

TABLE 3-IX

INFORMATION REQUIRED ON A PATIENT BILL

Patient Information Upon Admission

- Name
- Address
- Sex
- Date of Birth
- Health Insurance Claim Number
- Other Insurance Information

Provider Data

- Name and Address
- Number
- Medical Record Number

Treatment Data

- Admission Date
- Discharge Date
- Diagnosis
  - Admitting
  - Discharge
- Surgical Procedures
- Statement of Services Rendered (utilization, rate, charges)*
  - Blood Furnished
    - Replaced
  - Accommodations
  - Intensive Care
  - Operating Room
  - Anesthesia
  - Outpatient Services
  - Blood Administration
  - Pharmacy
  - Radiology
  - Laboratory
  - Supplies
  - Therapy (by type)
  - Other

Individual purchasers may require additional information.

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*These categories are listed specifically on the Medicare bill.

There are several major hospital discharge abstract systems in use. One of the most widely used is the Professional Activity Study (PAS), a program of the Commission on Professional and Hospital Activities (CPHA). The primary purpose of PAS is to provide displays of information derived from hospital records of inpatients for use by voluntarily subscribing hospitals. PAS attempts to increase the availability of medical record information for inter-hospital comparisons, utilization review, peer review, and other activities. The PAS abstract includes data blocks for Patient Identification, Administrative and Financial Data and Clinical Data.* The contents are identified in Table 3-X.

In order to prepare statistical tabulations showing case mix, by diagram, or relating variables such as length of stay and case cost to diagnosis, it is convenient to code the diagnosis information. This may be done, for example, using the ICDA** code, which contains three or four digits. The code classifies diseases by type of disease or disorder, site within the body, and other variables. For example, codes 000-136 are for various infective and parasitic diseases and codes 140-239 for various malignant, benign and unspecified neoplasms. Codes 010-019 are for Tuberculosis, and Code 011 is Pulmonary Tuberculosis.

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*PAS, and other hospital discharge abstract systems are described in detail in Arthur D. Little, Inc., PSRO: Organization for Regional Peer Review (Cambridge, Mass.: Ballinger Publishing Co., 1973).

**International Classification of Diseases, adapted (Eighth Revision).

TABLE 3-X

SAMPLE PATIENT DISCHARGE ABSTRACT

Patient Identification Data

- Medical Record Number
- Age
- Sex
- Race/Origin

Administrative and Financial Data

- Hospital Code
- Class of Admission
- Admission and Discharge Dates
- Hospital Service(s)
- Time Elapsed Before (or Date of) Surgery
- Referral to Committee/Special Case
- Attending Physician
- Consulting Physician(s)
- Source of Payment

Clinical Data

- Primary and Other Diagnoses
- Principal and Other Surgical Procedures
- Tissue Report
- Anesthesia
- Total Number of Consultations
- Findings of Admission Investigation (Hemoglobin, Temperature, BP, Urinalysis, WBC)
- Check Lists of Examinations, Laboratory, X-ray, and Function Tests Performed
- Check List of Drugs Administered by Major Categories
- Other Therapy
- Occupancy of Special Care Units
- Presence of Hospital-Acquired Infections and Other Complications
- Discharge Status and Destination (Including Type of Death and Autopsy)

Source: Arthur D. Little, Inc., Barry Decker, M.D. & Paul Banner, eds., PSRO: Organization for Regional Peer Review, Cambridge, Mass.: 1973, pp. 237-238.

3.3 Financial Aspects of Present Functions

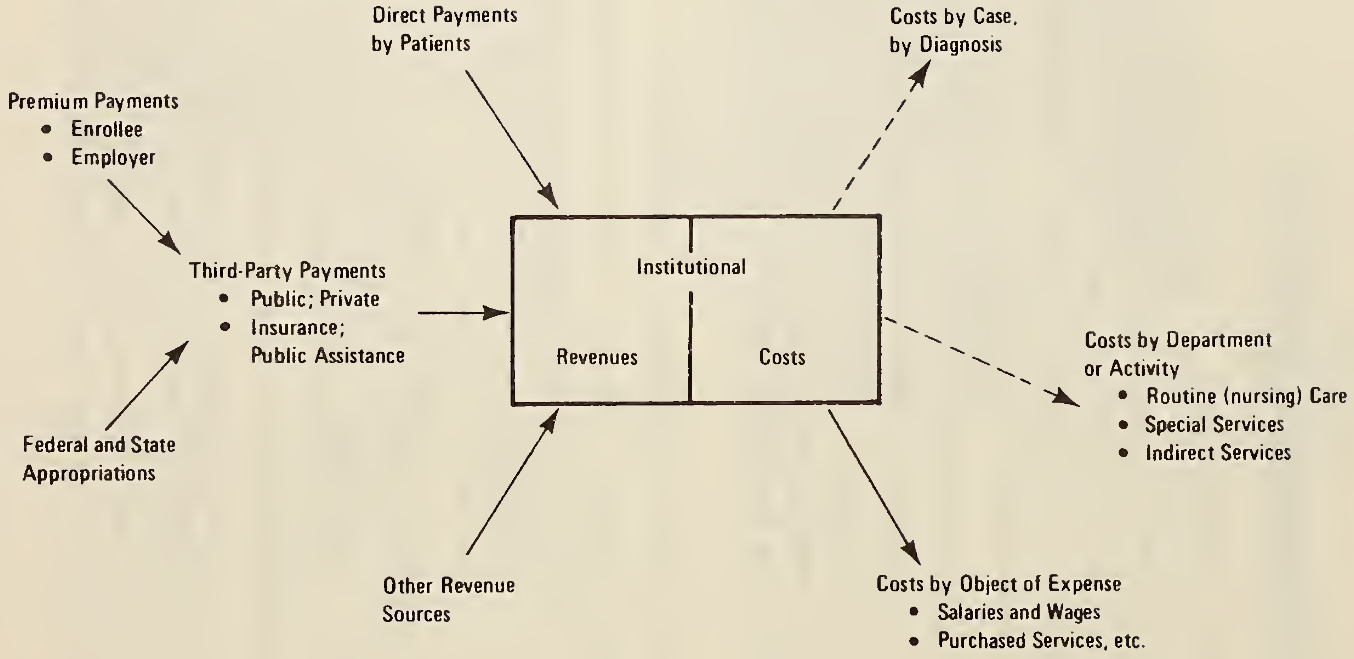
3.3.1 Flow of Dollars in Health Care

The financial system that supports the delivery of health care services by institutional providers has a number of components, as indicated in Figure 3-6. The sources of revenue are shown on the left, the types of expenditures on the right.

The primary sources are direct payment by patients, payment via bulk purchasers or third party payors, and other revenue sources such as charitable contributions, income from investments, etc. Third party payors, in turn, receive their income principally from premium payments from patients and employers, and from Federal and state appropriations.

The expenditures may be classified in several ways, for different analytic purposes: first, by object of expense -- salaries and wages, purchased services, purchased supplies and materials, etc.; second, by department or activity -- routine (nursing) care, special services, indirect or support services; and third, by case, usually broken down at the same time by diagnosis.

The remainder of this Section covers relevant aspects of the financial system. Section 3.3.2 includes a description of the financial characteristics of institutional providers, covering the sources and uses of funds for hospitals and nursing homes. The patient's share of the health care bill is summarized in Section 3.3.3. The impact of rate setting and other regulatory functions on cost containment and cost of services is discussed in Sections 3.3.4 and 3.3.5.



NOTE: The dashed lines indicate classifications that are alternatives to object of expense.

Figure 3-6. Flow of Dollars in Institutional Health Care

3.3.2 Financial Characteristics of Institutional Providers

The revenues and expenses of hospitals and nursing homes are discussed in detail in this subsection.

a. Hospitals

The 7,061 domestic hospitals constituted one of the nation's largest industries in 1972 with a total capacity of 1.55 million beds and overall assets of approximately $43.2 billion. As a rough measure of this industry's output, hospitals handled some 33.3 million admissions and more than 219 million outpatient visits at a total cost of more than $32 billion. They employed 2.6 million full-time equivalent employees with a total payroll of more than $19.5 billion.*

Federal hospitals, and to a lesser extent State and local government hospitals, operate largely on funds budgeted by government agencies. Private hospitals generally receive their revenue directly from the patient or from third-party payors (including private insurance carriers) and public programs such as Medicare and Medicaid, which have been assuming more and more of the private burden of paying for hospital care.

In Fiscal 1966, the year before Medicare, the private sector contributed 64 percent of the $14.2 billion bill for hospital care, the Federal Government contributed a 13 percent share, and State and local governments paid the remaining 23 percent. By Fiscal 1973, the private sector's share had declined to 46.8 percent. Some of the State and local share had been shifted to the Federal Government so that by Fiscal 1973, 34.8 percent came from Federal funds and 18.3 percent from State and local spending. The proportion of hospital care expenditures paid by private insurance declined from 42 percent in Fiscal 1966, to 35.6 percent in Fiscal 1973. Table 3-XI shows a breakdown of costs and revenue for hospitals.

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*The data in this subsection are from The National Health Insurance Resource Book, prepared by the Staff of the Committee on Ways and Means (Washington: U.S. Government Printing Office, 1974).

The cost of hospital care has risen substantially during the same period. There are two commonly used ways to measure the daily cost of hospital care: the Bureau of Labor Statistics' average daily service charge and the American Hospital Association's average expense per patient day.

Until recently, the average daily service charge, a component of the medical care index of the Consumer Price Index (CPI), included only the basic charge for room and board; all special services (e.g., drugs, tests, use of an operating room) were excluded. It reflected the rate for the most common type of accommodation (a semi-private room). Beginning with January 1972, the Bureau of Labor Statistics added seven auxiliary charges and developed a composite index for hospital service charges.

The American Hospital Association's average expense per patient day is an estimate of the total cost of a day of hospital care. It is an aggregate figure derived by dividing total expenses -- including outpatient and other expenses not attributable to inpatient care -- by the number of patient days. (Expenses incurred by inpatients but not billed by the hospital, such as physicians' fees, are excluded.)

A variant of this measure, called average expense per adjusted patient day, corrects for the inclusion of outpatient expenses. For this measure, total expenses are divided by the number of "adjusted patient days" in which patient days are added together with the inpatient-day equivalents of outpatient visits. (For example,

TABLE 3-XI

SOURCES OF REVENUE AND TYPES OF EXPENDITURES FOR HOSPITAL AND NURSING HOME CARE

APPROXIMATE PERCENTAGES FOR FISCAL YEAR 1971-1973

Sources of Revenue	Hospital Care		Nursing Home Care	
Private Sources		47%		41%
Consumers/Patients	8%		40%	
Private Health Insurance	38%		-	
Other	1%		less than 1	
Public Sources		53%		59%
Medicare	19%		5%	
Medicaid	10%		51%	
Veterans' Administration, Defense and other Public Programs	24%		3%	

Types of Expenditures	Hospital Care	Nursing Home Care
Labor Expense	60%	60%
Other Operating Expense	40%	21%
Fixed Expense (Equip., Bldg., Interest, Taxes)	40%	15%
Other Expense	40%	4%

Sources:

Social Security Administration, Office of Research and Statistics, "The Size and Shape of the Medical Care Dollar "(Washington, U.S. Government Printing Office, 1972) pp. 22 and 24.

National Health Insurance Resource Book, prepared by the Staff of the Committee on Ways and Means (Washington, U.S. Government Printing Office, 1974), p. 111.

if the cost of one inpatient day is three times the cost of an outpatient visit, then 3 visits will be equivalent to one inpatient day.) The number of adjusted patient days would then be equal to the number of patient days plus one-third of the number of outpatient visits. For Fiscal year 1972, the average hospital semi-private room charge was $173.90; the average total expense per patient day was $105.21 and the average total expense per adjusted patient day was $94.61.

Nationally, total expense per adjusted patient day in 1972 ranged from a low of $64.93 in West Virginia to a high of $130.64 in Alaska.

Annual net incomes of voluntary and proprietary community hospitals have increased from $29 million in 1950 to $547 million in 1971. On a patient-day basis, net income during the same period rose from 29 cents to $2.91. The rise in income is influenced by the fact that private hospitals are used more intensively now than before, and both the extent and level of insurance coverage have increased, resulting in more stable incomes for hospitals and lower losses due to bad debts and charity.

Significant differentials exist however between proprietary hospitals -- which earned a net of $6.43 per patient day in 1971 -- and voluntary hospitals -- which earned a net of $2.63 per patient day. This differential probably results from the fact that non-profit hospitals are larger, provide more specialized and expensive services and facilities, and, of course, proprietary hospitals are organized to yield profits to their investors.

Annual net incomes for both types of hospitals were three times as high in the 1967-69 period (following the advent of Medicare and Medicaid) as in the 1961-65 period, and almost four times as high in the 1969-71 period.

b. Nursing Homes

In 1963, there were approximately 319,200 nursing home beds for 17,565,000 aged Americans, or about 18 beds for every 1,000 persons aged 65 or older. In the following 8 years, the growth in the number of nursing homes in the Nation more than kept pace with the increase in the number of elderly persons. By 1971, there were 944,700 nursing home beds for 20,948,000 older Americans, or about 45 beds for every 1,000 older men and women, approximately 2.5 times as many nursing home beds for every 1,000 aged Americans as there were in 1963.

Accompanying the rapid growth in the number of nursing homes and nursing home beds has been a dramatic increase in expenditures for nursing home care. In Fiscal year 1950 expenditures for nursing home care totaled $178 million; by 1973 expenditures had increased eighteenfold to $3,735 million*, or 4.2 percent of total national expenditures for health services and supplies.

Nearly 60 percent of all nursing home care is financed from public funds, particularly the Medicaid program which provides over 51 percent. (In July 1972, some 5,700 skilled nursing facilities (SNFs) with a capacity of approximately 609,000 beds and as of May 1973, 5,917 intermediate care facilities (ICFs) with approximately

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*Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics, Medical Care Expenditures Prices and Costs Background Book, September 1973.

375,000 beds were providing service under the Medicaid program.) Three-fifths of the moneys from public sources are from the Federal Government. Table 3-XI shows an itemization of the costs and the sources of funds for nursing home care.

A figure for the total operating expenses of nursing homes is not available (presumably because of the large number of proprietary nursing homes -- approximately 77 percent of the Nation's nursing homes in 1971).

In Fiscal 1972, Medicaid spent $7.2 billion in behalf of the Nation's poor and medically indigent. Approximately one quarter was for nursing home care. In Fiscal 1972, Medicare spent $8.2 billion in medical care benefits of which only about 2 percent was for nursing home care.*

3.3.3 The Patient's Share of Health Costs

The average health care bill in Fiscal 1973 was $375 per person. Private health insurance paid $96 or 26 percent of the bill; philanthropy contributed another $5 or 1 percent, the Government, $142 or 38 percent. The amount remaining for the individual to pay directly was $132 or 35 percent (compared to 68 percent in Fiscal 1950).

The direct patient share varies substantially by age. For a person under age 65, private health insurance plays a larger role than for a person over 65, financing $100 (33 percent) of the average bill of $300. The patient paid an average direct share of $112 (37 percent), with Government and other sources paying the remainder.

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*Unless otherwise indicated, the data in this subsection are from The National Health Insurance Resources Book, prepared by the Staff of the Committee on Ways and Means (Washington: U.S. Government Printing Office, 1974).

The aged person's direct share was $311 (30 percent) of the average $1,052 bill. Medicare and Medicaid paid a substantial 64 percent; private health insurance paid 6 percent and all other sources paid the remainder (less than 1 percent) of the bill.* These statistics are displayed in Figure 3-7.

3.3.4 Factors Influencing Financial Aspects

The sources of revenue for institutional providers have changed since the enactment of Federal programs. Medical care is financed both publicly and privately. The private share has always been the largest but in recent years there has been a shift to more public financing since the beginning of the Medicare and Medicaid programs. In Fiscal 1966, State and local governments and the Federal Government each paid 13 percent of the $42.1 billion spent for national health care. In Fiscal 1973, the Federal Government paid 26 percent and State and local government 14 percent of the $99.1 billion spent in health care.

Provider costs are related to several factors including wages, length of stay, level of care, case mix, occupancy rates, and tests and services provided.

The patient's length of stay is related to what alternatives for care are available at the times of admission and discharge, respectively. In some cases inpatient care may not be necessary or

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*U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics, "Age Differences in Medical Care Spending, Fiscal Year 1973", Research and Statistics Note, DHEW Pub. No. (SSA 74-11701),27 March 1974.

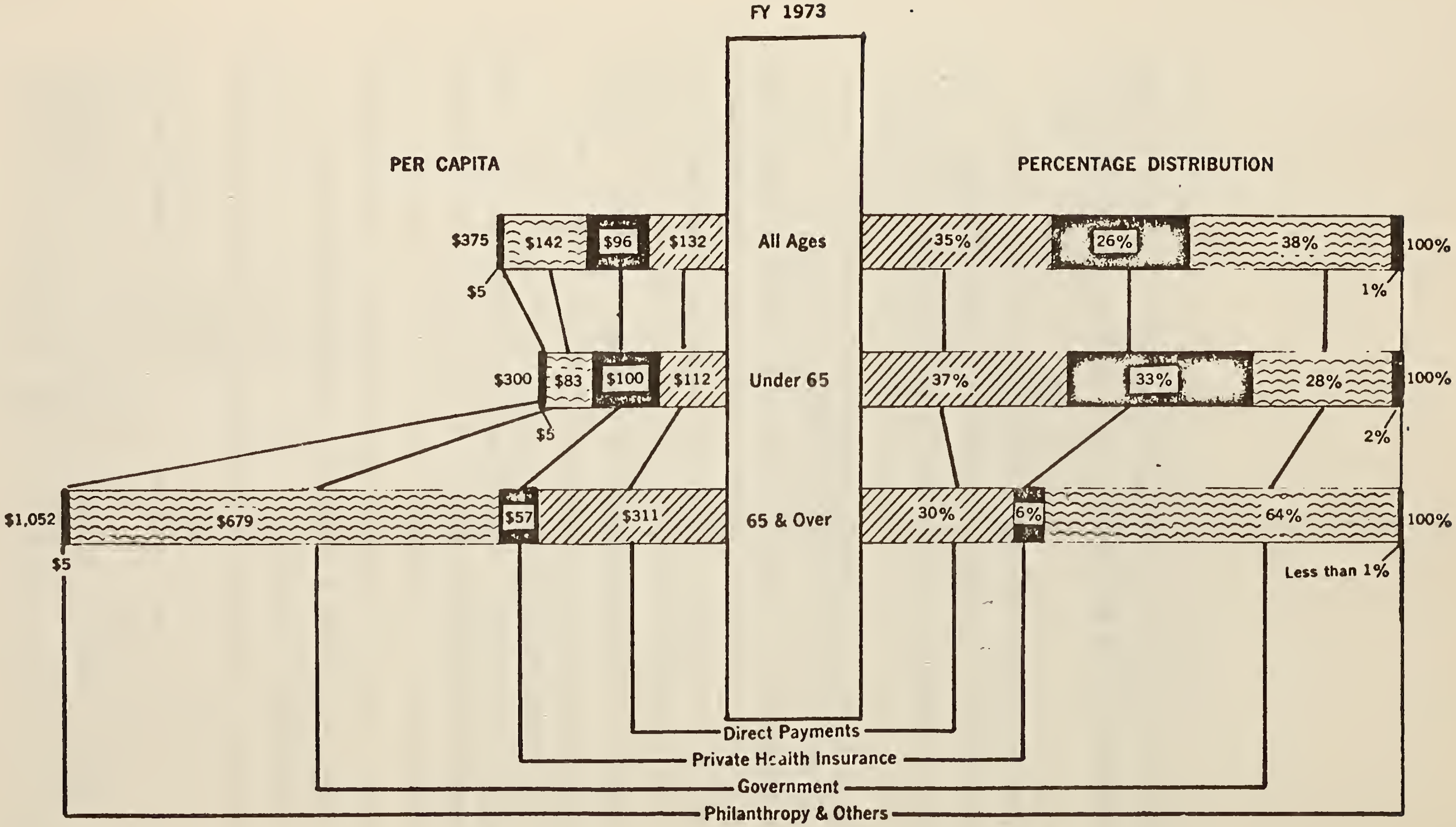

FIGURE 3-7

The Patient's Share of the Health Care Bill

Fiscal Year 1973

Source: "Age Differences in Medical Care Spending, Fiscal Year 1973" *Research and Statistics Note*, DHEW Pub. No. (SSA) 74-11701, Office of Research and Statistics, Social Security Administration, U.S. Department of Health, Education, and Welfare, March 27, 1974.

outpatient care may be combined with inpatient care (e.g., surgical preparations, tests, etc. on an outpatient basis). The patient may be discharged sooner than otherwise if, for example, care in the home through a home health agency is available.

The largest cost component is payroll, which represented approximately 60 percent of total operating expenses in 1972. This percentage has remained about constant over the last decade. Thus, both components have increased at approximately the same rate and both have contributed to the rapid rise in total costs.

The major components of payroll costs are the number of people employed and their skill mix and salary levels. The number of employees necessary to care for the average patient has increased markedly, from 1.8 in 1950 to 3.1 in 1972. Changes in treatment methods have tended to make use of additional equipment and skilled labor, without eliminating the need for other kinds of labor. Hospitals have also been forced to hire more unskilled persons to substitute for skilled labor in short supply, and to compensate for a shortening of the average work week. The increased skill requirements as well as the application of the minimum wage law to employees in hospitals and nursing homes have resulted in increased salaries. The average salary of employees was $7,051 in 1972, up 57.5 percent over the $4,476 average for 1967.

In addition, costs are higher where occupancy rates are low. If a hospital is used more intensively, then fixed costs can be distributed over more patients, thus reducing the average cost. Finally, costs may be higher for larger hospitals which tend to provide more specialized services and facilities and also tend to treat more difficult cases than smaller hospitals.

Some of these factors are under the control of the provider; others are not. Once the provider has done everything possible to insure that its services are being delivered in a cost-effective manner, there may be little it can do to curb costs. Health planning may assume an important role at this point by examining the inter-institutional health care delivery system.

The impact of rate setting on rising costs may depend on the method used as well as on the costs (administration, data collection, etc.) of rate setting. When the rate setting method is budget review without peer group comparison, it is unlikely that there will be much impact on costs. If next year's rates are set using the current year's expenses adjusted for inflation and anticipated changes in occasions of service, there is no mechanism for encouraging the institution to deliver services in a more cost-effective manner. This is particularly true if the institution is also allowed to apply for interim rate changes and end-of-year adjustments. Even if such adjustments are not allowed, one year's financial difficulties may be reflected in the next year's rate request, assuming the hospital can remain solvent in some manner (e.g., through working capital or debt financing) in the interim.

On the other hand, rates which are set by a mechanism that includes comparison with other institutions in the peer group may be more effective in curbing costs. The institution whose services are more costly than a peer's, all other thing's being equal, may be motivated to seek ways to deliver these services in a more cost-effective manner. If the institution cannot, the rate setting agency, in conjunction with a health planning agency, may assess the demand for the institution's services in various categories with the objective of eliminating some.

3.3.5 Relative Impact of Different Regulatory Functions

Rate setting is not, however, the only regulatory function that influences rates. All of the planning and regulatory functions that were discussed in Section 3.2 influence service costs in a variety of ways, some direct and some indirect. There are also many interactions between and among regulatory functions. A simple picture of these effects is presented below; more complete analyses will be presented in subsequent reports.

It is convenient here to look at the cost of a case, rather than at provider activity or departmental costs. The variables directly involved in the total cost of service for a particular case are the measures of utilization of the various services, and the applicable service rates, which depend upon direct and indirect costs and total institutional utilization. One of the case utilization variables is total length of stay, or length of stay by mode of service in a complex case.

All of these case variables depend in turn on a host of other choices, parameters and variables. Two major variables are choice of institution (both type and specific selection) and choice of mode of service (outpatient, emergency, various types of inpatient such as regular care, intensive care, etc.). These in turn depend in part on the supply of services in the service area, and their degree of utilization (determined by the demand for service). Dominating all other variables, however, is the diagnosis, which is necessarily a prime determinant of case cost.

Figure 3-8 shows the main ways that the regulatory functions impact total case cost. On the left of the figure are boxes indicating service cost factors, classified in four groupings: the health care system of the service area, overall medical decisions on

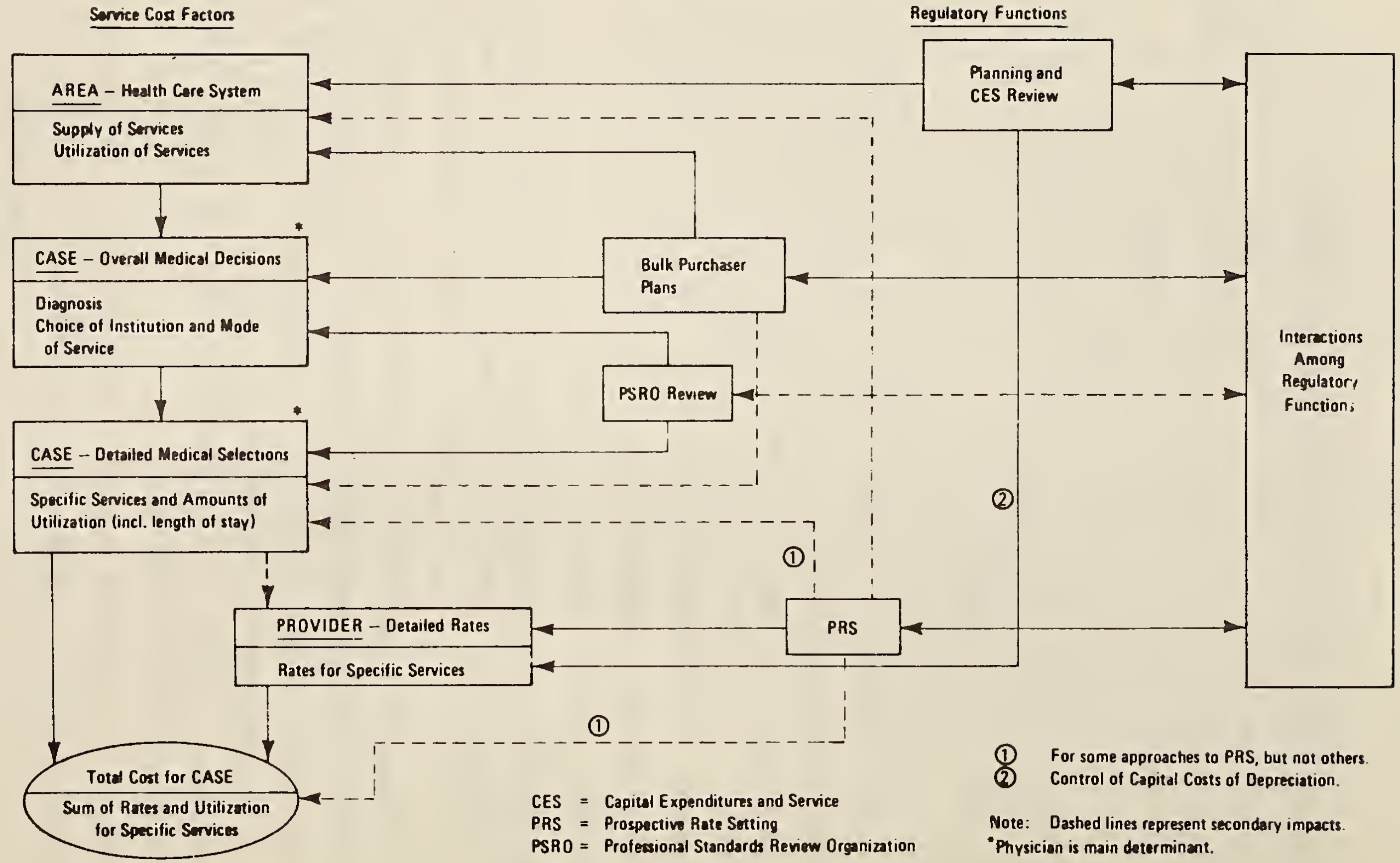
Service Cost Factors
Regulatory Functions
AREA – Health Care System
Supply of Services
Utilization of Services
CASE – Overall Medical Decisions
Diagnosis
Choice of Institution and Mode of Service
CASE – Detailed Medical Selections
Specific Services and Amounts of Utilization (incl. length of stay)
PROVIDER – Detailed Rates
Rates for Specific Services
Total Cost for CASE
Sum of Rates and Utilization for Specific Services
Planning and CES Review
Bulk Purchaser Plans
PSRO Review
PRS
Interactions Among Regulatory Functions
*
*
①
①
②
CES = Capital Expenditures and Service
PRS = Prospective Rate Setting
PSRO = Professional Standards Review Organization
① For some approaches to PRS, but not others.
② Control of Capital Costs of Depreciation.
Note: Dashed lines represent secondary impacts.
*Physician is main determinant.

Figure 3-8. Impact of Regulatory and Related Functions on Service Cost Factors

the case, detailed medical service selections for the case, and detailed provider service rates. On the right side of the figure, the regulatory functions are labelled PRS, Planning and CES, PSRO, and Bulk Purchaser Plan.

PRS impacts mainly the detailed rates, or for some less common PRS approaches, the length of stay, all-inclusive per diem, or total episode cost. It also can impact the supply of services, for example via allowances for depreciation in the rates, or sometimes by making it difficult for grossly inefficient institutions to continue operating. Planning and CES impact mainly the supply of services, and also some cost elements of detailed rates, chiefly via depreciation. PSRO reviews effect the pattern of medical decisions. The nature of the bulk purchaser plan impacts mainly service utilization, and choice of institution and service mode. In some circumstances or for some types of plans it may impact other variables.

Figure 3-8 also suggests both the strong interdependence of the various regulatory functions, and their complementary roles.

In all of the medical decisions and selections, including especially determination of diagnosis, the physician of course is the primary factor.

3.4 Functions Under National Health Insurance (NHI)

The functions to be performed by providers, purchasers and Federal and state agencies under NHI are discussed in this section from the point of view of expected changes in current procedures and finances.

3.4.1 Expected Procedural Modifications

Procedural modifications revolve around issues of uniformity vs. diversity, Federal and State roles, and changes in current provider and bulk purchaser functions.

If the number of purchasers were reduced, the total reimbursement process would be less complicated but procedurally similar to the present. It should be pointed out, however, that the number of purchasers is not necessarily fewer under any one of the proposed plans since private insurance is maintained (as is or augmented) under five of the six plans (see Table 2-VI). Private insurors are expected to have a larger (than present) role in selling insurance to cover coinsurance and deductibles. Differences could be envisioned, however, in the speed of reimbursement, the total amount (percent of charges) reimbursed, and the diversity of reimbursement forms (depending on the number of purchasers in the system).

The number of outside audits of hospital books would most likely be reduced. Presumably, there would be only a Federal (Federally-approved) audit, and this audit would be accepted by all purchasers. (A similar situation exists now in some states where Blue Cross accepts the audit of the state rate setting agency.)

Requirements for external reporting could be correspondingly reduced. It should be noted that a single Federal cost report is now utilized by three Federal programs: Titles V, XVIII and XIX.

Depending on whether the rate setting role is assumed by Federal or State agencies, and the method used, budgeting requirements would be more or less complex. It is quite possible that uniform budgeting and external reporting would come into existence. The budget might be prepared first on a responsibility accounting basis and then transformed to a functional basis.

3.4.2 Expected Financial Modifications

Most of the six currently proposed National Health Insurance (NHI) plans[*] emphasize insurance, rather than assistance, although some (namely Burleson-McIntyre, Administration, Corman-Kennedy, and Medicredit plans) rely on Medicaid or a Medicaid-like program for supplementary coverage. The plans vary in their relative mix of employer, employee, and Federal contributions.[**]

The major financial modification under NHI, then, is expected to be in the sources of funds for health care. The major differences lie in whether present bulk purchasers are supplemented or replaced.

In addition, the patient is expected to have more coverage, that is, to pay a lower out-of-pocket share of the provider bill.

The effect on demand for health services will most likely be that there will be a greater demand for services for chronic, non-acute conditions (e.g., dermatology services) and preventive services. In the absence of rate setting, the introduction of NHI might be expected to exert a great upward influence not only on the total cost of health care, but also on health care prices. An effective rate setting program, however, could do much to counter price increases.

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[*] These six plans are summarized in Table 2-VI.

[**] The funding sources for each plan are summarized in Table 2-VII.

4. DATA REQUIRED, SOURCES AND APPLICATIONS

4.1 Introduction

4.1.1 Purpose of PRSIS

In carrying out an effective rate setting program, the Rate Setting Agency (RSA) requires a large volume of data from providers and other data sources. The data received by the RSA must be reviewed and checked for possible deficiencies, assembled, filed, queried, processed, and utilized to generate the required output documents and reports. Some of the inputs and intermediate results, as well as final data outputs, must be transmitted to other agencies.

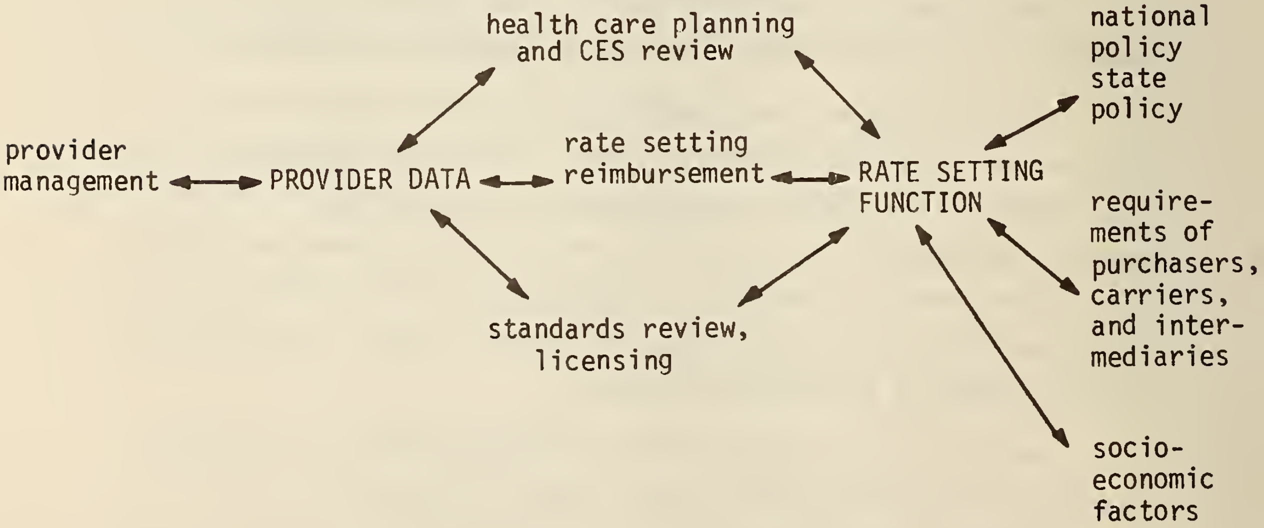
The purpose of the PRSIS design is to determine how the necessary data handling functions can be provided at minimum cost.

In this chapter, the required data content and processing functions are described in some detail. In the next chapter, other requirements of the PRSIS are described. As explained in Chapter 1, the data and functions of the PRSIS are classified into two groups: first, those that are necessary to rate setting and therefore considered mandatory for the system, and second, those considered optional increments to the mandatory set.

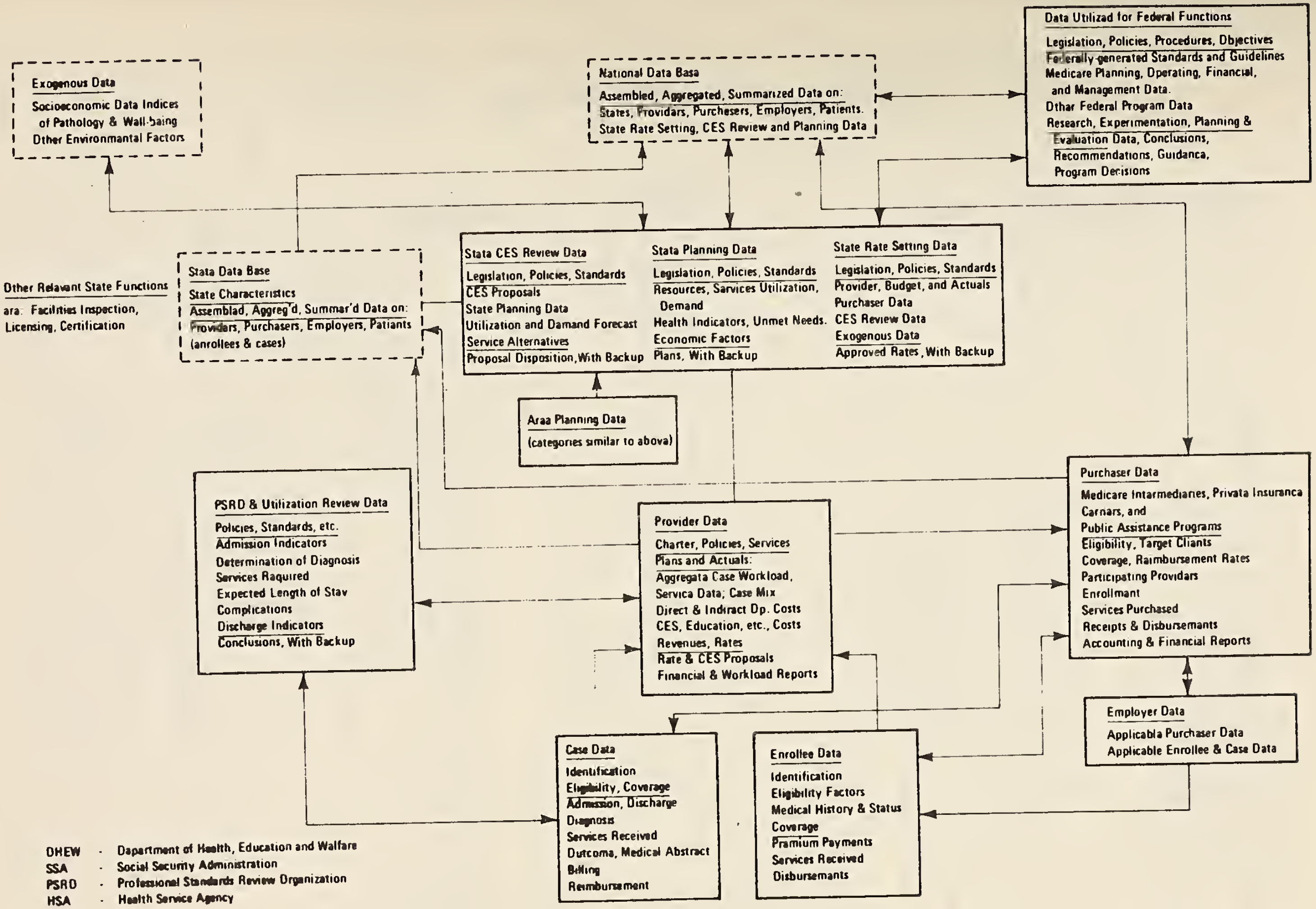
Because of its central role in PRSIS applications, the PRS function has been described at some length (see Section 3.2.1). The discussion below translates the PRS functional characteristics into implications for the information system.

4.1.2 Prospective Rate Setting Data Relationships

Although Prospective Rate Setting itself is a limited and relatively well-defined function, it has information requirements which are interlocked with many other functions in an extensive and complex "universe" of health care data. Figure 4-1 gives an overview of the main centers and gravitational flows of this universe. This figure is in terms of data centers (which correspond roughly to the principal agents or elements in the health care system). The primary flow of data for rate setting is between the institutional provider (hospital, nursing home or HMO) and the rate setting agency (Figure 4-2). However, two factors extend this primary relationship in many directions and involve the *data* used in rate setting in many other functions. Stated simply, the basic provider data is useful for many purposes other than rate setting such as health care planning and CES review; conversely, rate setting is influenced by data from several sources other than the provider, as shown below.


health care planning and CES review
national policy
state policy
provider management
PROVIDER DATA
rate setting reimbursement
RATE SETTING FUNCTION
requirements of purchasers, carriers, and intermediaries
standards review, licensing
socio-economic factors

We must define some subset of this data universe to be considered in PRSIS requirements, concepts, and designs. Beyond meeting the minimum requirements for rate setting, which PRSIS obviously must do, it appears that two other factors lead us to consider a larger data system:


Exogenous Data
Socioeconomic Data Indices of Pathology & Well-being
Other Environmental Factors
National Data Base
Assembled, Aggregated, Summarized Data on:
States, Providers, Purchasers, Employers, Patients.
State Rate Setting, CES Review and Planning Data
Data Utilized for Federal Functions
Legislation, Policies, Procedures, Objectives
Federally-generated Standards and Guidelines
Medicare Planning, Operating, Financial, and Management Data.
Other Federal Program Data
Research, Experimentation, Planning & Evaluation Data, Conclusions, Recommendations, Guidance, Program Decisions
Other Relevant State Functions
ara: Facilities Inspection, Licensing, Certification
State Data Base
State Characteristics
Assembled, Aggreg'd, Summar'd Data on:
Providers, Purchasers, Employers, Patients (enrollees & cases)
State CES Review Data
Legislation, Policies, Standards
CES Proposals
State Planning Data
Utilization and Demand Forecast
Service Alternatives
Proposal Disposition, With Backup
State Planning Data
Legislation, Policies, Standards
Resources, Services Utilization, Demand
Health Indicators, Unmet Needs.
Economic Factors
Plans, With Backup
State Rate Setting Data
Legislation, Policies, Standards
Provider, Budget, and Actuals
Purchaser Data
CES Review Data
Exogenous Data
Approved Rates, With Backup
Area Planning Data
(categories similar to above)
PSRO & Utilization Review Data
Policies, Standards, etc.
Admission Indicators
Determination of Diagnosis
Services Required
Expected Length of Stay
Complications
Discharge Indicators
Conclusions, With Backup
Provider Data
Charter, Policies, Services
Plans and Actuals:
Aggregate Case Workload,
Service Data; Case Mix
Direct & Indirect Op. Costs
CES, Education, etc., Costs
Revenues, Rates
Rate & CES Proposals
Financial & Workload Reports
Purchaser Data
Medicare Intermediaries, Private Insurance Carriers, and
Public Assistance Programs
Eligibility, Target Clients
Coverage, Reimbursement Rates
Participating Providers
Enrollment
Services Purchased
Receipts & Disbursements
Accounting & Financial Reports
Employer Data
Applicable Purchaser Data
Applicable Enrollee & Case Data
Case Data
Identification
Eligibility, Coverage
Admission, Discharge
Diagnosis
Services Received
Outcome, Medical Abstract
Billing
Reimbursement
Enrollee Data
Identification
Eligibility Factors
Medical History & Status
Coverage
Premium Payments
Services Received
Disbursements

DHEW - Department of Health, Education and Welfare
SSA - Social Security Administration
PSRO - Professional Standards Review Organization
HSA - Health Service Agency

Figure 4-1. Data for Health Care, Rate Setting, & Associated Functions

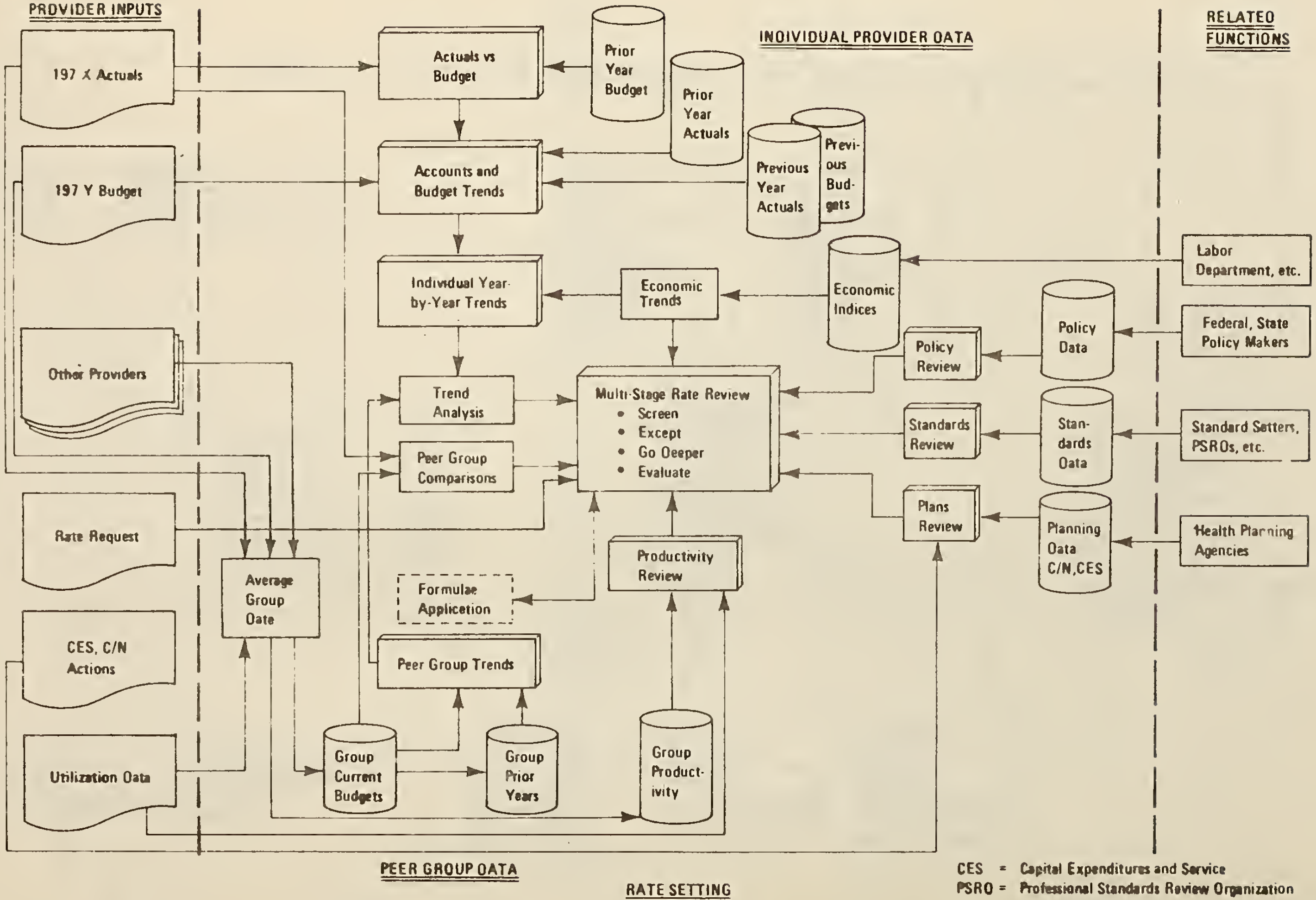


Figure 4-2. Rate Setting Data Relationships

1. Minimization of demands on the providers for provision of data in multiple forms to multiple users; and
2. Efficient service and data provision to other functions closely related to rate setting.

In the first instance, hospitals and other institutional providers are currently bedeviled with a multiplicity of reporting requirements which have greatly increased both the time and the cost of data preparation and reporting. By a systems approach to PRSIS requirements laid on the provider, allowing for other functional requirements to the extent they can be foreseen, it may be possible to arrive at an integrated data system serving multiple uses with as little strain on the provider as possible. This approach can both cut overall costs and make the system more palatable to the provider. In the second case, an integrated approach can not only cut extra-provider costs of data handling in the entire package of functions, but can also assure that such functions as area planning, PSRO reviews, state and national planning, and purchaser planning are all based on consistent and timely data.

Clearly, the information needs for rate setting are a direct result of the rate setting methodology used. The range of prospective rate setting methodologies is described in Section 3.2.1. Also, in that section a "maximum" rate setting procedure is described. Similarly here, in order to provide the broadest range of data requirements, this phase of the study assumes that the rate setting methodology is based on detailed information regarding provider costs, revenues and utilization (utilization is taken to include detailed statistics on the type, quantity, and duration of services provided to the purchaser). Specific rate setting methodologies may use a reduced set of this "total" set, as described later in Section 4.2.6.

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Taking into account both the information required for prospective rate setting itself, and that involved in associated planning and regulatory functions, and for billing and reimbursement, we arrive at the list of basic data inputs shown in Table 4-I. Inputs are classified as "core PRSIS" (mandatory) and "optional", and are consistent with the overall PRSIS definition given in Chapter 1. Inputs listed in Table 4-I include most of the data shown in Figure 4-1 except for detailed bulk purchaser, employer and enrollee data.

4.1.3 Methodology

In defining data requirements the following steps are followed in Section 4.2:

1. The overall system topology is described, and an enumeration made in Table 4-II of all participant locations or system "nodes". The major system "branches" or channels of communication are also described. Table 4-III characterizes the distribution of provider nodes (hospitals and nursing homes) by state.

2. The principal data transmissions (interfaces) between participants are characterized in Figure 4-3 and the documents involved are described briefly in Table 4-IV.

3. An enumeration of the major data blocks within documents, and the source organization and user organizations for these blocks, are given in Table 4-V. Definitions of documents, blocks and other data components are given in Table 4-VI.

4. Data dynamics and structure is then defined (Table 4-VII) in terms of frequency of data exchange, how long data is stored, and related factors.

TABLE 4-I

SCOPE OF PRSIS DATA INPUTS

Core PRSIS Data

Provider Reports[1]

- Operating Budget:
  - Statistics
  - Budgeted Expenses
  - Cost Allocation and Proposed Rates
  - Budgeted Revenues
- Capital Expenditures Budget
- Cash Flow Budget
- Reports on actuals vs. budget

Provider Rate Submissions

Semi-Fixed Provider Descriptors

- Identification
- Classification
- Capacity

Bulk Purchaser Data

- Enrollment
- Financial Reports

Federal, State Standards, Guidelines, Policies, Legislation, etc.

- Titles V, XVIII, VIX, P.L. 93-641, Standards

Data From Other Regulatory and Planning Agencies

- CES, Planning, Inspection and Licensing, PSROs

Socio-Economic Forecast Data

- Demography
- Health Trends, Demand for Health Care,
- Economic Indices

Optional PRSIS Data

Billing by Providers

- Individual to Patients
- Individual or Aggregate to Bulk Purchasers

Patient Discharge Abstracts

- Identification, Administrative and Clinical Data

Purchaser Enrollee Status and Eligibility Data

- Scope and Duration of Coverage
- Benefit Structure, Coinsurance and Deductibles
- Financial Status

Reimbursement Data

- Reimbursement to Providers
- Reimbursement to Intermediaries

Data Support to Other Regulatory and Planning Agencies

- Utilization Statistics (for planning and CES)
- Semi-Fixed Provider Data (for inspection & licensing)

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[1] Hospitals, Nursing Homes and Other Institutions

5. Next, a quantitative model of the PRSIS (Figure 4-4) is developed, supplemented by Table 4-VIII. This gives measures of input data volume, rates of data flow in the system and capacities of required data storage.

6. Finally, the influence on data volume of the choice of PRS approach is discussed briefly.

The emphasis throughout this phase of the study is to develop functional relationships, not to define operational or technical procedures. In other words, which must be processed, exchanged or stored is identified, but not how or where. For example, the costs for a provider revenue center could be made available to the rate setting agency in "raw" detailed form, or could be processed and summarized by the provider for the agency; data could be transmitted frequently or once a year; past data could be stored by the provider or the agency; and data could be in electronic or hard copy form. These questions are not addressed in the requirements phase, except to the extent that some assumption is made for clarification or for exemplary purposes.

It is worth restating that in this functional requirements phase data needs are described very generally, hopefully in such a way that any particular rate setting methodology will be served. In a sense, the question is asked, "What data might be needed to serve the rate setting function before deciding which way the functions is to be performed?"

4.2 PRSIS Description

4.2.1 System Topology

The PRSIS is intended to be a data system of nationwide scope that must serve or interact with a large number of participant organizations or agencies that operate in a hierarchy of levels extending from local to national, and involve a variety of types of functions or activities, such as rate setting, planning and development, and financial processes. Table 2-I and Figures 2-1 and 2-2 identify the major participants, and depict their arrangement "vertically", by level, and "horizontally," by type of function or activity.

In view of these participant distributions by level and by function/activity, and the related participant distribution by geographical location, the PRSIS can be described as a data handling network composed of participant-associated nodes, at each of which some or all of the functions of data input, output, storage and processing are carried out, and communication branches (paths, lines or trunks) for the transmission of information among nodes.

The use of the term "nodes" and "branches" may suggest a completely automated, distributed data processing system utilizing computerized techniques at each node, and digital data transmission in each branch. This implication is not intended, however; the appropriate roles in the PRSIS of "ordinary" documents and manual techniques on the one hand, and of computerized and other automated techniques on the other, have not yet been determined, although it is clear that significant portions of the PRSIS will be computerized. The nodes and branch terminology is introduced simply in order to facilitate analyses and trade-off studies that will be reported in subsequent documents.

The distribution of nodes by level is given in Table 4-II. Levels indicated are: national, regional, state, area/local, and provider. The enumerated nodes are characterized as "potential" since some types, such as local Medicare offices, might not participate in PRSIS. Not shown in the table are employers, who also might have a role in the PRSIS. There are about 12 million business enterprises in the U.S., of which about 1.7 million are corporations.

Many of the participants listed as possible nodes in Table 4-II would have minor roles, if any, in the PRSIS. For rate setting *per se* the dominant information handling nodes are the 51 rate setting agencies (assuming the function is carried out on a state basis), and the 30,000 providers.

Table 4-III shows statistics for the distribution by state of hospitals, hospital beds, nursing homes, and nursing home beds. For each category, the minimum, median, mean and maximum are given, both as a number and as a percentage of the U.S. total. From the table it is seen that the percentages by state vary from 0.04% to 0.2% for the minima (Delaware or Alaska) to 9% to 19% for the maxima (California or New York). The source of data for this table is the detailed listings in Appendix A.

For rate setting and associated functions, the primary data inputting nodes are providers; the primary data filing and processing nodes are rate setters. For billing and reimbursement, the primary data inputting nodes are also providers, the primary filing and processing nodes are bulk purchasers or their agents or intermediaries.

The largest total volume of data regularly transmitted via branches is "upward" from providers to bulk purchasers or their agents or intermediaries, i.e., billing* and associated data; and from providers

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*Some billing data is sent to enrollees.

TABLE 4-II

NUMBER OF POTENTIAL PRSIS NODES BY LEVEL

National Level - Perhaps 20-30 in all

Federal Agencies: Various elements of DHEW including Title V, XVIII and XIX Programs; Other Federal Agencies.
Federal Councils: PSRO National Council, National Health Planning Council.
Non-Governmental: Blue Cross & Shield, Commercial Insurers Hq., AHA, other National Trade & Professional Bodies.

Regional Level - Present HEW Organization has 10 Regional Field Offices

State Level - 51 States counting District of Columbia; perhaps 20-30 each

State Agencies, Commissions, Councils: Dept. of Public Health (and State Inspect. & Licensing), State Title V and XIX Programs, Rate Setting Agency, CES Review Agency, State Health Planning and Dev. Agency, PSRO State Council
Non-Governmental: Blue Cross & Shield, State Offices of Commercial Insurers, State Hospital Assn., other State level Trade & Professional Assn.

Area/Local Level - Total number uncertain

Some hundreds of Health Planning Agencies and PSROs.
Over 900 Federally-operated local Medicare offices.
Unknown number of local offices of other bulk purchasers.

Provider Level - Some 30,000 in all

Some 7500 Hospitals (6500 General Med. & Surgical; 1000 Specialty)
Some 22,000 Nursing Homes (12,900 Nursing Care; 3600 Personal Care with Nursing; 5400 Personal Care Without; 200 Domiciliary Care)
Nearly 200 HMO's.

TABLE 4-III

DISTRIBUTION BY STATE OF HOSPITALS & HOSPITAL BEDS, AND NURSING HOMES & NURSING HOME BEDS

-for 50 States plus District of Columbia-

	Hospitals	Hospital Beds (thousands)	Nursing Homes	Nursing Home Beds (thousands)
TOTAL U.S.	7,481 (100%)	1,467 (100%)	22,004 (100%)	1,202 (100%)
Minimum	14 (0.19%)	1.7 (0.12%)	8 (0.04%)	0.65 (0.05%)
Name of State	Del.	Alaska	Alaska	Alaska
Median	129 (1.72%)	18.3 (1.25%)	253 (1.15%)	15.1 (1.26%)
Name of State	Mississippi	Washington	Nebraska	Nebraska
Mean	147 (1.96%)	28.8 (1.96%)	430 (1.96%)	23.6 (1.96%)
Name of Closest State	Alabama	Minn.	Oklahoma	Georgia
Maximum	643 (8.60%)	162 (11.04%)	4,277 (19.44%)	155 (12.90%)
Name of State	California	New York	California	California

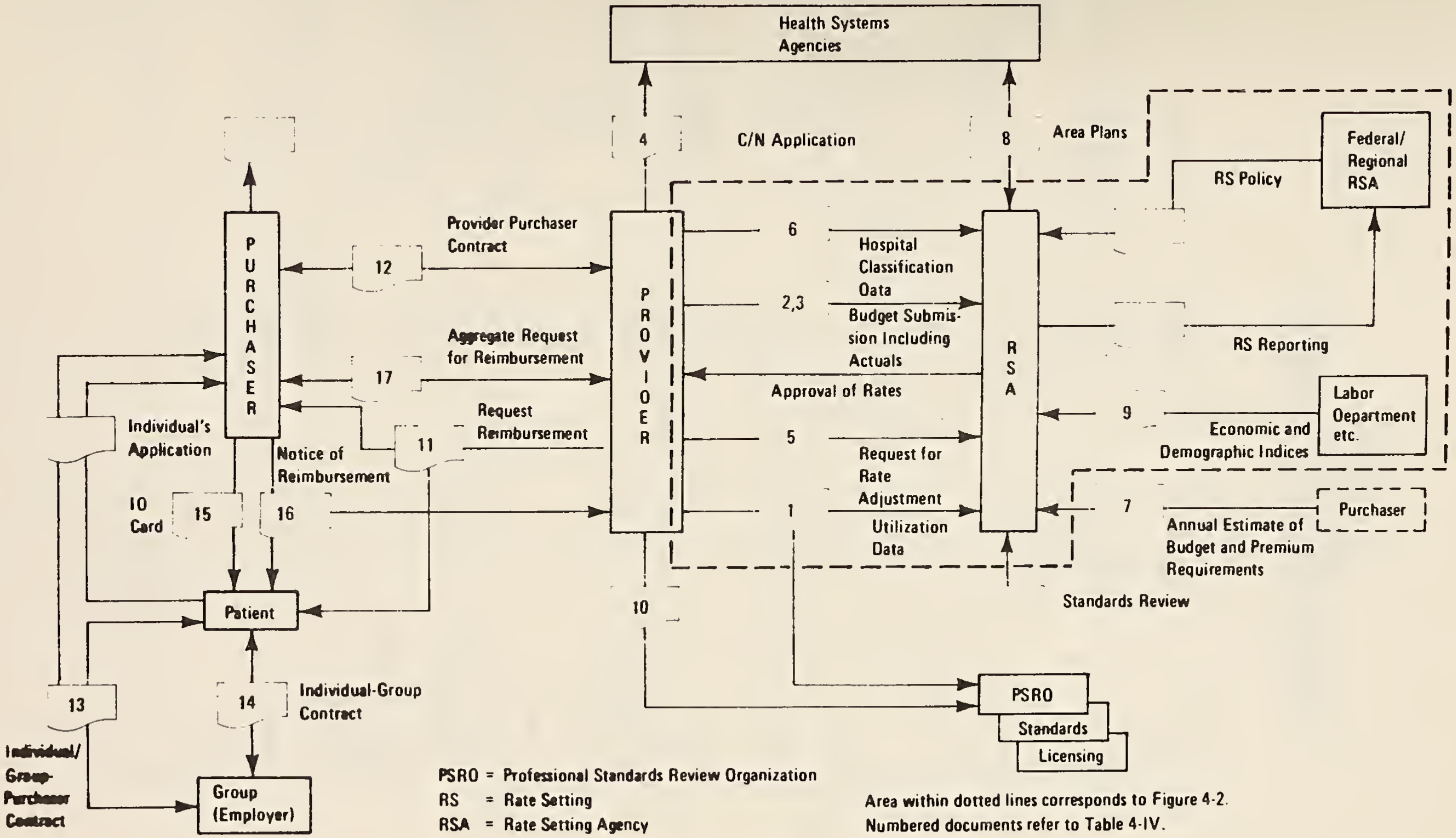
to rate setters, i.e., budgets, actuals, rate proposals, etc. There may also be large volumes of data transmitted from providers to PSROs, i.e., patient discharge abstracts and associated data.

4.2.2 Data Exchanges (Interfaces)

The principal data exchanges in rate setting and related functions are indicated in Figure 4-3 in terms of the typical documents used in the exchange between the agencies shown. (Other secondary documentation will be involved in the real-life data transactions; however, the basic documents shown are taken to characterize the type and volume of data sufficiently for present purposes.) Document content is tabulated in Table 4-IV. (This table is an attempt to define these documents adequately without presentation of the entire document as a sample -- a procedure necessitated by, for example, the sheer bulk of each hospital budget submission.)

4.2.3 Source and User Information

A simple (though tedious) way of defining the data universe in rate setting is to define the original data source and the family of data users for all data in the system. The level of data aggregation best used in such a presentation is both difficult to determine and critical. A balance must be struck between a level of detail that would be prohibitive to document and a level of aggregation which is too high for use in design of meaningful alternate information systems. For example, an aggregate level as high as "Annual Budget" may disguise the original sources of much of the data and, more probably, will blur the actual use of data by the many recipients of the "budget" who may be using only limited portions of the total document. Table 4-V is an initial attempt to satisfy this level of



PSRO = Professional Standards Review Organization
RS = Rate Setting
RSA = Rate Setting Agency

Area within dotted lines corresponds to Figure 4-2.
Numbered documents refer to Table 4-IV.

Figure 4-3. Major Interfaces of Rate Setting and Related Functions

TABLE 4-IV

BASIC DOCUMENTS IN PRSIS

Document by Data Block	Function	Source	Recipients	Contents
Provider				
1. Utilization Data	Planning, Rate Setting	Provider	HSA, RSA, PSRD, Licensing	Facilities, Occupancy, Patient Days, Service Units
2. Budgets			RSA	
3. Actuals			RSA	
4. C/N Application	Planning		HSA	
5. Request for Rate Adjustments	Rate Setting		RSA	Proposed Rates, Justification
6. Hospital Classification Data	Planning, Rate Setting		RSA, HSA	Descriptors
Purchaser				
7. Annual Estimation of Budget and Premium Requirements			State, Federal Agency	Number of Members, Projected Budget, New Capital Expenditures, Estimated Premiums
Regulatory, Planning Agency Data				
8. HSA Area Plans	Rate Setting, Planning	Population Health Trends, Provider Reports	RSA	Projected Facilities for Current, Future Years
Socio-Economic				
9. Economic Indices	Rate Setting, Planning	Dept. of Labor	RSA	Estimated Increases in Selected Price Indices for Current, Future Years
Provider - Case				
10. Patient Discharge Abstract (PAS, MAP, etc.)	Rate Setting, Standards, Utilization Review	Provider/Patient	RSA, PSRD	Patient History, Diagnosis, Treatment
11. Request for Reimbursement	Reimbursement	Provider	Patient and/or Purchaser	Patient Identification, Diagnosis, Service Rendered, Charges
12. Provider-Purchaser Contract	Reimbursement	Purchaser	Provider	Range of Services Covered, Rate Agreement
Purchaser - Case				
13. Individual/Group Purchaser Contracts	Contractual Coverage of Services for Group and for Individual	Purchaser/Individual/Group	Group Members	Number of People Covered, Benefits, Premiums, Payment Channels and Frequency, Financial Risk Structure
14. Individual/Group Contract	Contractual Agreement Between Individual and Group	Group	Individual	Benefits, Premiums, Duration
15. Individual's Insurance Certificate	Confirm Coverage	Purchaser	Provider	Identification of Individual, Benefits
16. Reimbursement Notification	Reimbursement	Purchaser	Provider/Patient	Amount of Payment, Coverage
17. Aggregate Request for Reimbursement	Reimbursement	Provider/Intermediary	Ultimate Purchaser*	Utilization of Services, Cost of Services

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*Frequently the Government

TABLE 4-V

USAGE OF DATA WITHIN THE PRSIS

	Type of Participant				
Data Block	**Provider**	**Purchaser**	**Standards, Licensing**	**Planning**	**Rate Setting**
Provider					
Budgets					
Operating Budget	I-CHF Planning Accounting Reporting	I-CHF Auditing	IG-CH Inspection, I-CH-Inspection Licensing Certification	IG-CHF Planning, Analysis	IG-CHF Rate Setting, Analysis, Review, Screening
Statistics	↓	↓		↓	↓
Expenses	↓	↓		↓	↓
Cost Allocations & Proposed Rates	↓	↓		↓	↓
Revenues	↓	↓	—	↓	↓
Capital Expenditure Budget	↓	↓	—	↓	↓
Cash Flow Budget	↓	↓	—	↓	↓
Rate Submissions	—	IG-C Accounting	—	—	↓
Descriptors	—		IG-CH Inspection	IG-CHF Planning	↓
Purchaser					
Enrollment	—	I-CHF Planning, Accounting, Reporting	IG-CH Certification[1]	IG-CHF Planning	IG-CHF Rate Setting, Analysis
Financial Reports	—	↓	↓	—	↓
Regulatory, Planning Agency					
Area Plans	I-CF Planning	IG-CF Planning	—	IG-CHF Planning	IG-CHF Analysis
Socio-Economic					
Price Indices	—	F Planning	—	CHF Planning	IG-CHF Rate Setting, Review, Analysis
Demographic Data	G-CH Planning, Analysis	CF Planning	—	↓	↓
Provider - Case					
Admission/Record[1]	I-CH Accounting, Planning	IG-CH Planning Accounting	—	—	—
Patient Discharge Abstract	I-CH Planning, Reporting	—	IG-CH Review, Standards	—	—
Bill[1]	I-C Accounting	IG-C Accounting	—	—	—
Purchaser - Case					
Coverage, Eligibility	I-C Accounting	IG-C Accounting	—	—	—
Reimbursement	IG-C Accounting	IG-C Accounting, Planning	—	—	—
Enrollee Utilization	—	IG-CH Planning	G-CHF Certification[1]	G-CH Planning	G-CH Analysis, Rate Setting

Data Type Abbreviations:

I = Individual
G = Group
C = Current
H = Historical
F = Future

---

[1] May be done by a separate insurance commission.

data definition; at present it is undoubtedly incomplete and should be considered exemplary rather than definitive. This table uses the "data component definitions" given in Table 4-VI.

Table 4-V basically shows the various purposes that PRSIS data is used for, once it has been introduced into the system. In addition, some indication of the class and frequency of data use is shown by an alphabetic reference to the "Definitions" (Table 4-VI). Data is referred to as "Individual" (I) or "Group" (G) depending on the relationship of the "user" data to the data as prepared by the "source", e.g., if data is prepared on individual patients, then that data is characterized as I if used directly on a per patient basis, as G if it is used in a summarized form (e.g., "number of patients with diagnosis of appendectomy"). The temporal character of the data used is also indicated, i.e., whether the user is interested in Current (C) data, Historical (H) data or Future (F) data. For a complete example, the following symbology "IGCH" means that this data is used in both individual form and group form, and involves both current and past data.

4.2.4 Data Dynamics

The previous parts of this section have been concerned with the "static" characteristics of the data set -- type, contents, volume, etc. It is also necessary to characterize the time-variable parameters involved. In general, the rate setting and related health care functions operate on a relatively slow time scale in relation to many other information systems. Response times are typically in days or weeks rather than the seconds or hours of many systems. In that sense, time parameters are perhaps less important in rate setting, but it is still necessary to define the frequency of reporting, length of time that data is of interest (must be stored), acceptable delays, etc., if an efficient information system is to be designed. Table 4-VII summarizes some tentative data dynamics for the primary data blocks.

TABLE 4-VI

DEFINITIONS FOR DATA COMPONENTS IN PRSIS

DATA ELEMENT	- A unitary, single item of data, normally not broken down. The term data element may be used either in a generic or a specific way. Examples of generic data elements: Patient's Name, Price, Year, Number of Beds. Examples of specific data elements: John Jones, $27, 1976, 250 beds.
ENTRY	- Each use of a specific data element in a block or document. The same data element (e.g., 1976) may be duplicated as many entries in a given document such as a budget.
DATA BLOCK	- A set of data elements normally occurring together and functionally related. A data block is usually part of a larger document but may be a complete document in simple cases. Examples: Patient Identification, Diagnosis, Admission Charges, Operating Revenues.
DOCUMENT	- A formal, standard, or common collection of data blocks normally associated with formal transfer of data between groups or agencies. Examples: Annual Budget, Utilization Review Report, Rate Request.
CURRENT DATA (C)	- Data of any type that is actively in process or in effect at the current time. Examples: Current Rates, Bills (in process), Current Year Budget.
HISTORICAL DATA (H)	- Data of any type which refers to past conditions and is not currently in force. Examples: Past Year Budgets, Summary of Utilization for 197X-7Y.
FUTURE DATA (F)	- As above, projected to future years. (Note: this year's budget is current data.)

(continued)

TABLE 4-VI (concluded)

INDIVIDUAL DATA (I) - Data elements, blocks or documents referring to one individual of the reference class; i.e., one patient, one hospital, etc. Examples: Mass. General Hospital Budget for 1976, Bill to A.B. Smith, Radiology costs for Hospital XYZ.

GROUP DATA (G) - Individual data, referring to a pertinent group, which has been arithmetically processed (summarized, averaged, etc.) to represent data characteristic of the group as a whole, or which applies to the group collectively. Examples: Average Bed Utilization for Greater Boston Hospitals, Patient-Days by Service in Lowell Hospitals, Total cost of Services to Medicaid patients in 1975, 1976 Obstetric Service Rate for Teaching Hospitals.

TABLE 4-VII

DATA DYNAMICS OF PRSIS CORE DATA

Data	Frequency of Reporting to RSA	Frequency of Use by RSA	Number of Years Data Kept
Provider Report Data	Annually, Quarterly	Annually, Quarterly, Intermittently[1]	5[2]
Rate Submission	Annually, Intermittently	Annually, Intermittently	5
Semi-Fixed Provider Descriptors	Annually, Intermittently[3]	Annually	5
Bulk Purchaser Data	Annually	Annually	1
Government Policies Standards Guidelines	Intermittently	Continually	Until Superseded
Regional and Planning Agency Data Regional Plans Standards Review	Annually	Continually	1
Socio Economic Forecast Data Economic Indices Demographic Data	Annually	Continually	5

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[1] As needed for rate requests, etc.

[2] Arbitrarily chosen

[3] May be submitted only if changed

Rate setting tends to be associated with an annual cycle, although the characteristics of the cycle may vary widely. Rate setting may be primarily scheduled in advance, and occurring at the same times from year to year, or ad hoc, with rate reviews being carried out at any time at the initiative of a provider, the rate setter,/or another party such as a bulk purchaser. Also, the starting times of the provider budget and reporting cycles or fiscal years can all be synchronized (as in Massachusetts) or variable throughout the year (as in the State of Washington). These variations will yield greatly different work schedules for the rate setting agency. A synchronized cycle will yield a large pulse of rate submission review, screening and analysis once each year -- presumably in the two to four months prior to the start of the provider fiscal year. The ad hoc approach and/or the variable provider fiscal year approach, could distribute the workload of review, screening and analysis more evenly throughout the year. But regardless of the overall characteristics of their annual cycles, the rate setting agencies normally will have to complete processing of each submission within a one to three month period. In a computerized system, the biggest problem might well be getting the data into the computer in time to use its analytical and report generating capability.

4.2.5 Quantitative Model

Quantitative aspects of information flow will become much more important in later detailed design phases involving specific system configurations. In this section, however, a very rough estimate of data workload (volume per unit time) is presented only to indicate order-of-magnitude levels for data transfer and data storage. These estimates are derived for a model state system encompassing 800 providers (hospitals and nursing homes), assuming the most general mode of rate setting. The results are given schematically in Figure 4-4. The data can be scaled up or down to larger or smaller states or regions, since (at least at the present level of design) the relationships are essentially linear. Table 4-VIII summarizes the assumptions for parameter values upon which Figure 4-4 is based.

The following comments apply to the data in Figure 4-4 and Table 4-VIII. The model used is that each individual provider sends a complete Individual Budget Submission (IBS) to the RSA each year, accompanied by an Individual Rate (Change) Submission (IRS) and follows up with an Individual Quarterly Report (IQR) equal to 5% of the IBS. The data volume for an IBS is based upon the State of Washington standards, which include three years of data, and budget submission forms with a capacity of about 90 thousand entries. This represents what is believed to be a maximum requirement for data submission; other states may require submission of considerably less data than this. Nursing home reports have not been studied in detail, but they are assumed to have about 10% of the entries of hospital reports.

The data requirements of a "model state" are also indicated in Figure 4-4 and Table 4-VIII. The model state is assumed to have 200 hospitals and 600 nursing homes. With the other assumptions indicated in the table, the total for all the IBS annual submissions in the state is about 20 million entries. (If a single-year IBS form were used instead of a 3-year form, the total number of entries would be reduced from about 20 million entries to less than 7 million. The 5-year storage of IBS data for the model state would be of the order of 27 million entries in either case, assuming that data for each year is stored only once.)

Aggregating IBS annual submissions for the entire United States, would result in about 760 million entries. Of course, most of the IBS annual submission data might be of little interest at the

TABLE 4-VIII

ASSUMED PARAMETER VALUES USED IN CONSTRUCTION OF FIGURE 4-4 (QUANTITATIVE MODEL)

Standard Annual Budget Submission, by a Provider to meet maximum PRS data requirement[*], contains:

90K entries for large (and complex) hospital (K = thousands)
70K entries for small hospital
9K entries for nursing home
5% of above included in quarterly report
1K entries included in rate submission

Model State used for Figure 4-4

200 hospitals (40 "large")
(This is 2.67% of U.S. total of 7481 hospitals)
600 nursing homes
(This is 2.73% of U.S. total of 22,004 nursing homes)
10 peer groups for interprovider cost comparisons.

Approximate Patient Activity

0.9M	Annual inpatient admissions to hospitals (M = millions)
30K	Average patient census in hospitals (K = thousands)
6M	Annual outpatient visits to hospitals
30K	Average patient census in nursing homes

Note: The "model state" is about 40% larger than the "mean state" tabulated in Table 4-III, but is considerably smaller than the "maximum state".

Average Region - assumed to contain 1/10 of providers in U.S.

Total U.S. - receives data from all 7481 hospitals and 22,004 nursing homes.

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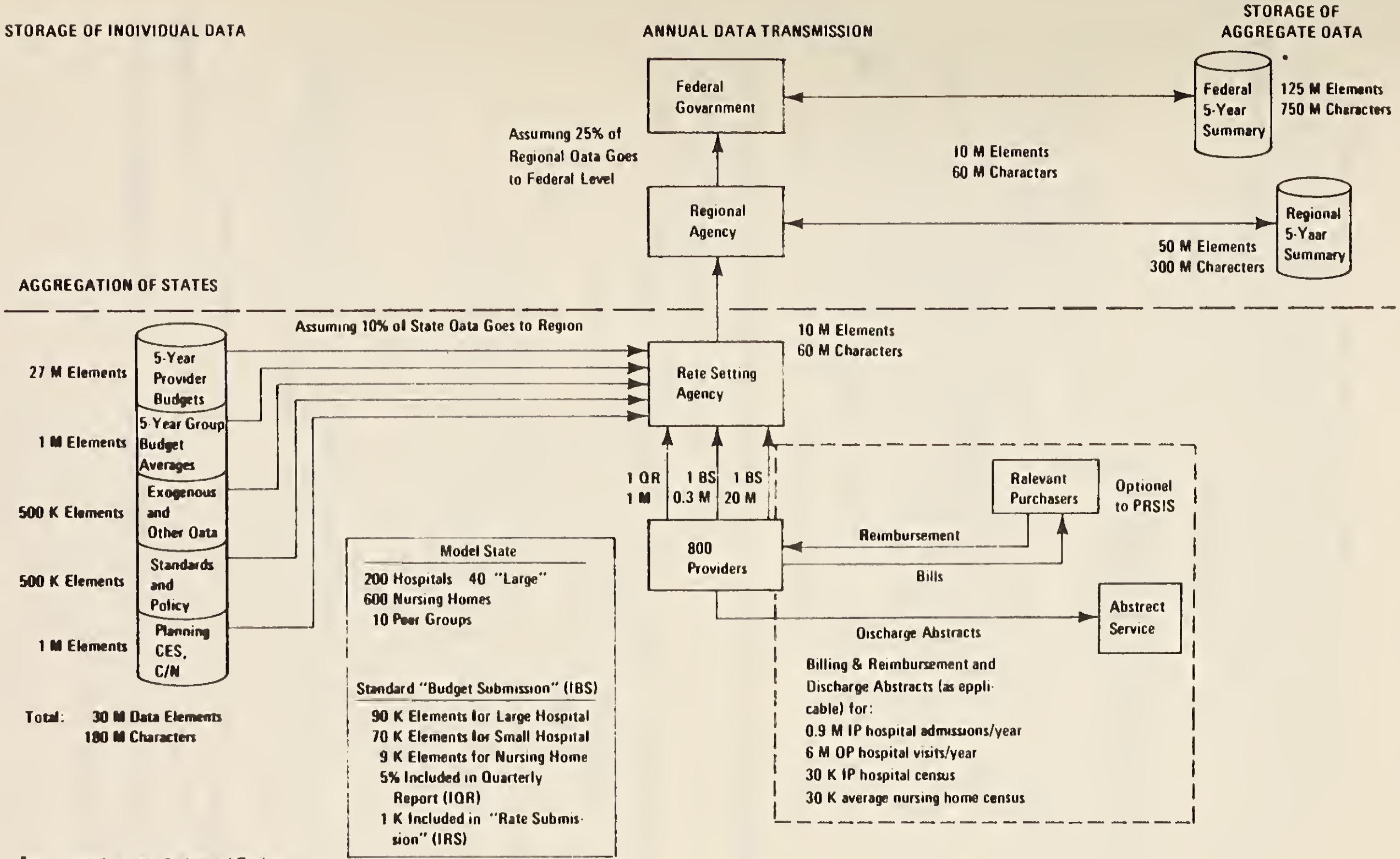
[*] Based upon provider reporting requirements described in Washington State Hospital Commission, Accounting and Reporting Manual for Hospitals, Olympia, October 1974.



*One of 10 Federally Designated Regions

IBS = Individual Complete Budget Submissions (including operating budget, actuals, and statistics; cash flow, and capital expenditures budgets)

IRS = Individual Rate (Change) Submissions

IQR = Individual Quarterly Reports

M = Million; K = Thousand

IP = Inpatient OP = Outpatient

Figure 4-4. Quantitative Model Based on a Sample State

national level, so that much less than this amount might actually be transferred. Table 4-VIII shows some illustrative data for both the national level and also for an average multistate region, assumed to contain 1/10 of all the U.S. providers.

4.2.6 Comment on Different PRS Approaches

As stated earlier, the need for provider data in rate setting is clearly dependent on the particular method of rate setting used. In this phase, we are concerned with possible requirements for provider data. Present rate setting methods cover a spectrum of budget review and formula methods, based on both intra-provider and inter-provider comparisons, therefore, present methods subsume a broad set of data requirements.

A classic model for most present rate setting includes some subset of the following data (shown in Figure 4-2). The provider submits a proposed set of rates and a budget for the target year. Rates are then approved or disapproved based on:

- Review of proposed budget alone
- and review based on past budgets/accounts
- and review based on peer group budgets/accounts
- plus allowances for inflationary factors
- and/or formulae based on any of the above.

Presumably, the key data in all the above are revenue center costs as the primary factor in equivalent revenue center rates.

There appear to be four levels of data volume required for different forms of rate setting. Using approximate data for a "large" and complex hospital and State of Washington reporting formats, as an example, these levels are:

- Full complement of data, assumed to be about 90K entries per year. (K = thousands)
- Summary budgetary and accounting data, say 10% or 9K for each provider, plus complete detail for 20% of providers that fail to pass screening. Total data are 27K entries.
- Summary budgetary and accounting data only for all providers, 9K entries per provider.
- Rate submission only, assumed to be 1K entries for a provider.

4.3 Impact of National Health Insurance

The information system design for PRSIS is most heavily influenced by three factors:

1. the specific method of rate setting used; and
2. the interrelationship between rate setting and other health care functions; and
3. the degree of standardization of data, file structures and document formats both within and among states.

Presumably, National Health Insurance will impact on all these areas, although any rate setting method used in NHI may be equivalent to a non-NHI method in terms of impact on the information system. NHI will probably have a major influence on the interfunctional relationships and associated data exchanges, particularly in the areas of reimbursement, CES planning and approval, and client (enrollee) functions, and may serve to standardize these data exchanges. In addition, NHI may cause a shift in the "center of gravity" of the data mass toward the national level, especially if one of the more comprehensive plans is forthcoming. Presumably, however, detailed functions will still be performed at an area, state or regional level. For the more centralized and comprehensive versions of NHI, a very large data load will be placed on the agency that manages the NHI program; that load now being distributed among purchasers, intermediaries, and carriers. The total load, however, may in fact be reduced because of less need for data duplication.

Under NHI, the amalgamation of presently dispersed purchaser roles into one agency (if so implemented) may also have the effect of easing the information requirements placed on the provider by reducing the number of agencies dealing with the provider and putting more emphasis on standardized reporting. Certainly reduction of provider data reporting costs should be a major design goal in NHI information systems.

5. OTHER SYSTEM REQUIREMENTS

Chapter 2 identified the organizations that are potential participants in the PRSIS; Chapter 3 covered the relevant functions of these participants; and Chapter 4 described the data that would be involved in the PRSIS as inputs, files or outputs and the nature of the required data processing. This chapter discusses other requirements of the PRSIS, such as performance characteristics, cost limitations and properties necessary for ease of implementation.

5.1 Preliminary Remarks

The discussion in this chapter is qualitative in nature. It identifies the factors that must be considered in any subsequent system design, and gives a general picture of their relative importance. Subsequent reports will cover these requirements quantitatively, and in more detail.

The concept of the PRSIS implied by this requirements document has many variable aspects and factors due to such uncertainties as: what form of NHI will be enacted, which organizations then will have what roles, what form or forms of PRS will emerge as the most successful, and what detailed PRS procedures will be found efficient. Despite all these undetermined variables, however, certain key properties of the PRSIS seem reasonably well established at this time. These are:

- The PRSIS will be hierarchically organized and will have significant data inputs and outputs at most or all of the following levels: national, multistate regional, state, substate planning area, local and individual provider. It may also involve individual enrollee/patient data.

- At almost every level the PRSIS will involve both the governmental and private sectors, and several types of agencies, commissions, technical and trade associations, and other types of organizations.
- Data will be exchanged both "vertically" and "horizontally"; with suitable rules of transmission and data access, and suitable data protocols and formats.
- The largest suppliers of input data, in aggregate, are the providers.
- Significant portions of the PRSIS can effectively be computerized. Digital data processing is useful in some applications at the provider level and the substate planning area level, and would be highly applicable at higher levels.
- Computers used in prospective rate setting over the next few years will mostly not be dedicated solely to PRS work -- they will be multi-user. Examples are governmental data centers at the national or state level, Blue Cross or Shield data centers, university or commercial data centers, etc.
- EDP systems already in use in current PRS operations, or brought into use over the next few years, will probably exhibit great diversity in equipment, programming languages, systems and applications software, file data structures, etc. It will be important to utilize the results of this diverse experience in the detailed design of the PRSIS.
- Other EDP systems currently in operation in the health care and other fields, particularly those of national scope such as the system used by the Medicare program, could also furnish useful design concepts and operational experience.

- The greatest technical problem in achieving a PRSIS with the necessary data exchanges may be obtaining the required standardization nationwide.

5.2 System Design and Other Technical Considerations

5.2.1 Performance Factors

Before a data handling system can be designed, it is necessary to specify such requirements as speeds of operation, required response times and capacities of data storage for each major element of the system, and to state also what degrees of reliability, availability and maintainability are required. In a data handling communication/processing network, such information is required for each node and branch. (See Section 4.2.1 for definitions of nodes and branches.)

Workload or volume information for major types of data was given in Chapter 4. Other performance data will be documented in subsequent reports.

It appears that performance requirements are rather modest by data processing standards except in two respects: the number of interacting branches and nodes in the system, and the total amount of data stored (especially for the more inclusive PRSIS options). Transaction volumes are also high for the larger system options.

5.2.2 Systems Interface with User Organizations and Personnel

The number of organizations directly participating in the PRSIS will be very large. The bulk of the data inputs will come from institutional providers of health care which number some 30 thousand*. Not counting individual enrollees, individual employers, or local offices of bulk purchasers, there would be on the order of a thousand other organizational participants in the PRSIS (see Section 4.2.1.). Clearly, a large program involving publication of operating manuals, training and workshops will be necessary during PRSIS implementation.

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*This assumes that all categories of nursing homes, including domiciliary care homes, are part of the system.

The interfaces between the PRSIS and both the persons who furnish data inputs and those who receive data outputs should be designed to facilitate the user PRS activities, not obstruct or constrain them. Though this seems like an obvious requirement, it is frequently not met very well in data processing systems.

In any data processing system, particularly one involving large amounts of input data obtained from a large number of source organizations, the maintenance of suitable quality controls on inputs is a major problem. The data input process is most effective if verification, audit and review processes are completed at the earliest opportunity, so that any omissions and errors that are detected can immediately be corrected. In computerized systems, interactive data input using a display terminal is often highly effective in achieving these ends. For example, in updating provider semi-fixed descriptive information in the PRS file, it may be effective to call up the old information on a display terminal, and directly modify it on-line, with suitable verifications and checks.

In output functions there is also a choice between relatively immediate query-triggered responses and either slower query responses (which can often be batched) or routine reporting. Where quick responses are required by the user, response parameters must not be such as to frustrate the user's purpose. For example, one could visualize an interactive use of a computer in certain kinds of screening and analysis of provider budget report submissions. Here response times of no more than a few seconds would be desirable.

It is probable that the PRSIS will be utilized to perform special computerized analyses of types that may not be anticipated in the initial system design. Here system software that accommodates the commonly used programming languages (such as COBOL and FORTRAN), and computer scheduling that permits quick turn-around time, will both be important.

5.2.3 Standardization

One of the most striking aspects of the PRSIS is the need to standardize many aspects of the system nationwide if the necessary data exchanges (both "vertical" and "horizontal") can be easily handled. This standardization includes definitions of data elements, and content and arrangement of documents and reports. In portions of the system where computerized data exchange is to be utilized, standardization must be extended to file structures and formats, transaction definitions, message formats and coding, and communications "discipline".

Standardization is also required regarding such factors as degree of verification/audit of input data, file maintenance criteria, rules of file access (see next subsection), and file purging rules.

As has been mentioned previously, the administrative workload on the provider would be greatly simplified if the basic documents and reports that he must prepare could be standardized. This refers particularly to standardization among bulk purchasers of requirements for billing forms, accounting/reporting forms, and audit requirements.

5.2.4 Privacy and Confidentiality

The Federal legislation now governing what information is to be held private, and what must be disclosed to the public, is the

Privacy Act of 1974, Public Law 93-579 (88 Stat. 1896; 5 U.S.C. 552a note), and the Freedom of Information Act (81 Stat. 54; 5 U.S.C. 552) as amended by Public Law 93-502 of 1974.

The privacy law specifies the conditions under which records maintained by a Federal agency on an individual may be disclosed. These conditions are, briefly:

- Release within the agency, including its agents (e.g., intermediaries) and certain contractors.
- Release to the individual himself, except in certain cases where information is considered (by the information source) harmful to the information.*
- Release to third party, providing the individual has given his written consent.
- Routine disclosures to designated recipients for specified purposes -- needed for the processes of government to continue.

The freedom of information law requires each Federal agency to publish or to make available information about its organization, policies, rules of procedure, manuals and instructions, together with all agency records. There are, however, certain other conditions imposed, and there are nine specific exemptions from this disclosure.

Much of the data that would be entered into the PRSIS or developed through processing by the system is in the public domain. This includes most or all of the data directly involved in setting rates. There are, however, certain candidates for inclusion in the PRSIS data-domain that would be confidential. These include the following types of data:

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*This particularly includes certain medical records.

a. Patient-Identified Data - Data linking patient identification with diagnosis, mode of treatment, certain provider identifications, income data or certain eligibility data.

b. Provider-Identified Data - Data permitting assembly of total caseload, case profile, or total billing by physician*; also perhaps some kinds of financial data for proprietary institutions.

c. PSRO Data - Data collected or developed by PSROs regarding individual patient cases, and perhaps some kinds of provider data.

For these types of data, access would have to be limited, and determined strictly on a need-to-know basis. The system would have to contain safeguards to prevent unauthorized access.

Confidentiality requirements must be taken into account when design decisions are made concerning the extent of consolidation and multi-participant sharing of data bases, concerning the choice of dedicated vs. shared computer facilities, and concerning the choice of data structures and of inquiry modes. They will also impact the choice of communications modes and routing, and degree of on-line access permitted.

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*Especially if the physician is acting as a "natural person" instead of a corporation.

5.2.5 Optional Capabilities and Special Features

As defined in this report, the PRSIS can be divided into a core system of basic capabilities required for PRS plus a number of additional optional capabilities and special features. How many of the latter should actually be included in the system will be determined as part of the design process.

The system capabilities that are considered optional are:

- Ability to provide direct support to non-PRS regulatory and planning activities, such as CES review and health care planning.
- Processing bills submitted by providers, and accounting for reimbursements.
- Advancing funds to agents or intermediaries to enable them to reimburse providers.
- Checking the eligibility status of consumers seeking care.

Some special features that could be of interest are:

- Ability to capture and use clinical data from the hospital discharge (or equivalent source). (Some clinical data would be needed for some PRS approaches.)
- Ability to input and handle multiple patient descriptors (age, sex, ethnicity, religion, marital status, area of residence, etc.) for various analysis and research purposes.
- Ability to game impact of proposed rate changes or other decisions on purchaser-to-provider reimbursement, individually or aggregated in various ways. (This implies a financial flow model).

- Ability to assemble longitudinal multi-episode data on individual patients through suitable patient data linkages. (Note confidentiality problems.)
- Ability to utilize semi-fixed provider classification data for various non-PRS operational functions, such as preparing mailing labels, notices, or other media.

5.2.6 Implementation Considerations

The enabling NHI legislation will probably define many of the ground rules for the establishment of the PRSIS. Recommendations concerning provisions that would be useful to incorporate in legislation will be given in a later report.

As stated in Chapter 1, a system of the size and complexity of the PRSIS would have to be realized in stages. Following system conception and design, there should be a pilot operation or test stage, in which one or more experiments are run in limited jurisdictions, such as a single state. Assuming positive results are obtained from the experiments, any lessons learned from the test stage should be incorporated into the PRSIS design, and then a phased or progressive system implementation could take place.

The broader the scope of the PRSIS, the more organizations and people would have to be involved in the implementation process. If the PRSIS includes a data base that is to be shared by several planning and regulatory functions -- e.g., PRS, CES review, health planning, PSROs -- the necessary agreements and mandates would have to be obtained in advance.

By the time that the progressive implementation could be initiated, there would already be in operation throughout the country a great many PRS activities. These might still be diverse in their rate setting approaches, or perhaps one or two approaches might have emerged into positions of dominance.

All of the PRS activities would have supporting information systems, probably many of them based at least partly on computerized data processing. There might be a considerable diversity of data processing systems from which a nationwide system would have to be developed. On the other hand, some standardization may have been introduced, through the efforts of committies, for example, under AHA or Federal auspices, or through the imposition of Section 1533(d) of P.L. 93-641, and perhaps other legislation yet to be enacted.

There is, of course, a very positive aspect to the diversity of approaches now being taken in information systems supporting PRS activities. A wealth of operational experience should be available before the formal PRSIS is implemented; this should furnish a valuable input to the PRSIS detailed design and installation processes.

5.3 Cost Considerations

The designer of any system must of course recognize cost constraints as well as desired results and operating and other characteristics. Generally speaking, the cost of the system should bear some reasonable relation to the expected value of the system. It seems appropriate to spend a dollar to achieve tangible benefits worth two dollars, but not those worth only fifty cents unless there are also intangible benefits of some importance. This discussion identifies approaches that could be taken in cost and benefit analyses. Actual calculations will be presented in a future report.

SSA currently is funding a number of projects directed toward the evaluation of prospective rate setting or reimbursement systems. It is anticipated that preliminary or final results of these efforts will provide insights useful to the establishment of a suitable cost/benefit evaluation for the PRSIS.

5.3.1 System Benefits

Presumably, the principal tangible benefits are reductions in health care service rates and costs in consequence of the operation of the PRSIS, by comparison with what they would have been without the PRSIS. It seems difficult, however, to separate the impact of the PRSIS from the impact of the PRS function that it serves.

There are three at least partially separable targets for cost savings through PRS and associated regulatory and planning functions:

a. Current costs within individual providers. This considers the services that the provider offers, how they are utilized, and the components making up the cost of each type of service.

b. Current costs among a group of providers within a service area. This looks at the whole set of services available in a service area, and how fully these services are utilized, and relative costs among different providers.

c. Cost changes from one year to the next. This deals with inflationary factors affecting salaries, and prices of purchased goods and services.

If either within or among providers there are inefficiencies and other sources of unnecessary costs[*] (i.e., costs not required for effective patient treatment), and if the PRS mechanism can operate effectively and is allowed to, sizeable savings in current service cost to the consumer could result. Note that an average cost savings nationally of about 1% in institutional health care would be equivalent to some 1/2 billion dollars annually. If success were achieved in the early years of PRS operation in any given jurisdiction, and the major inefficiencies thereby removed, the costs might tend to stabilize at some level adequate for a financially viable health care industry. If such an equilibrium were reached, the PRS program in that jurisdiction could then enter a "maintenance" phase in which the main consideration would be inflation from year to year.

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[*] The determining of what is "unnecessary" requires medical judgments and health care planning judgments as well as financial ones.

There are, however, many factors which might prevent this equilibrium from being reached, even if PRS were highly successful:

1. Major changes in the underlying medical sciences, and in medical technology.
2. Changes in the attitudes and expectations of the public.
3. General economic problems and uncertainties such as the current combination of recession and inflation.
4. More specific revenue problems occurring at all levels of government -- but especially in some states and some cities.
5. And, of course, changes in health care delivery and financing that might come with NHI.

5.3.2 System Cost

Clearly, the total cost of the PRSIS would include the cost of all stages of design, test, and implementation as outlined in Section 5.2.6, together with operation and maintenance of the completed system. In each of these phases, there are several cost components, which could be classified either by object of expense (i.e., personal compensation, purchased services, supplies and materials, equipment, other supporting expenses), or by function or activity. In terms of the latter classification, the main expenses during PRSIS development and implementation would be for participant interactions such as workshops, preparation of manuals, training, etc., and for detailed procedural design and computer programming. The most costly component of PRSIS operation would probably be data input and associated functions.

The funding for PRSIS would come from several sources; because of this, a useful set of cost criteria would need to involve several points of view.

The cost of prospective rate setting may be partitioned into the cost of information system support (the PRSIS), and other costs. The ratio of information support costs to other rate setting costs for each rate setting agency should be appropriate to the policies, activities and procedures that are involved. No specification of ratio seems appropriate here, since workload and other factors will vary widely between agencies.

Moreover, PRS is not an isolated function; rather it will be carried out in conjunction with other planning and regulatory activities. To properly compute PRS cost, one will therefore have to charge PRS for the cost of support from other functions, and subtract off the cost of PRS support furnished to these functions.

5.3.3 Benefit/Cost Comparisons

In order to evaluate the appropriateness of the cost of a rate setting program proposed for a particular jurisdiction, such as a state, one needs the following five components:

a) Realistic cost estimates, by year, for the necessary investment (make-ready costs) to be incurred in the development, installation and test of the rate setting program, and its supporting information system.

b) Realistic cost estimates, by year, for the cost of system operation and maintenance.

c) Some credible forecast by year, of the value of expected tangible benefits; especially the reduction in cost of health services due to PRS.

d) A rationale, such as discounted rate of return, for analyzing costs and value of benefits to arrive at an index of merit. This would compare the sum of the discounted values of (benefits less operation and maintenance) with the investment cost.

e) A way of incorporating intangible benefits into the evaluation process.

This process would deal with the benefits to those who made the initial investment; benefits to other parties might also be a factor.

Expected benefits could be estimated by:

a. Comparison with past history of benefits and expenses in hopefully comparable programs in other areas.
b. Analysis of the mechanisms of cost saving, through PRS, and what cost reductions could reasonably be expected from them.

Regardless of what methods of calculation are used, it may be difficult to separate the effect of prospective rate setting from the effects of other regulatory and control mechanisms, and from the effects of exogenous factors such as changes in the overall economy.

APPENDIX A

SUPPLEMENTARY STATISTICS ON HOSPITALS AND NURSING HOMES

This Appendix contains unpublished data from the National Center for Health Statistics Master Facility Census as reported in: U.S. Department of Health, Education, and Welfare, Public Health Service, (Health Services and Mental Health Administration) National Center for Health Statistics, Health Resources Statistics, DHEW Publication No. (HSM) 73-1509, 1974.

TABLE A-1

Hospitals by Type and State: 1972

State	Total hospitals[1]	General medical and surgical	Specialty				
			Total	Psychiatric	Chronic disease	Tuberculosis	Other[2]
United States	7,481	6,491	990	497	78	75	340
Alabama	150	136	14	5	–	7	2
Alaska	28	26	2	1	–	–	1
Arizona	86	81	5	3	–	1	1
Arkansas	102	99	3	1	–	1	1
California	643	572	71	36	–	1	34
Colorado	102	88	14	7	–	–	7
Connecticut	68	47	21	12	6	–	3
Delaware	14	9	5	1	1	–	3
District of Columbia	21	16	5	2	–	–	3
Florida	226	206	20	14	–	2	4
Georgia	203	183	20	11	–	1	8
Hawaii	30	22	8	1	2	1	4
Idaho	52	49	3	2	–	–	1
Illinois	302	255	47	26	2	9	10
Indiana	138	119	19	11	1	2	5
Iowa	156	145	11	7	–	2	2
Kansas	167	157	10	7	1	1	1
Kentucky	134	117	17	6	–	5	6
Louisiana	163	149	14	5	–	1	8
Maine	61	57	4	3	1	–	–
Maryland	82	57	25	14	5	1	5
Massachusetts	236	159	77	31	27	1	18
Michigan	268	234	34	21	2	–	11
Minnesota	195	181	14	8	–	2	4
Mississippi	129	122	7	2	1	1	3
Missouri	178	159	19	10	–	1	8
Montana	74	72	2	–	1	1	–
Nebraska	118	113	5	4	–	–	1
Nevada	28	24	4	2	–	–	2
New Hampshire	36	35	1	1	–	–	–
New Jersey	140	111	29	14	2	1	12
New Mexico	67	59	8	3	1	–	4
New York	422	337	85	45	8	3	29
North Carolina	171	144	27	7	2	4	14
North Dakota	62	61	1	1	–	–	–
Ohio	258	213	45	26	2	4	13
Oklahoma	153	142	11	6	1	1	3
Oregon	94	86	8	4	–	–	4
Pennsylvania	329	254	75	35	2	3	35
Rhode Island	22	17	5	3	1	–	1
South Carolina	99	89	10	5	1	1	3
South Dakota	69	66	3	2	–	–	1
Tennessee	168	146	22	9	2	4	7
Texas	575	527	48	17	–	3	28
Utah	42	39	3	1	1	–	1
Vermont	21	19	2	2	–	–	–
Virginia	132	109	23	12	–	1	10
Washington	135	121	14	6	–	2	6
West Virginia	92	81	11	6	2	1	2
Wisconsin	208	151	57	37	3	6	11
Wyoming	32	30	2	2	–	–	–

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[1] Preliminary data.

[2] Includes eye, ear, nose, and throat hospitals; epileptic hospitals; alcoholism hospitals; narcotic hospitals; maternity hospitals; orthopedic hospitals; physical rehabilitation hospitals; and other hospitals.

TABLE A-2

Hospital Beds by Type and State: 1972

State	Total[1]	General medical and surgical	Specialty				
			Total	Psychiatric	Chronic disease	Tuberculosis	Other[2]
United States	1,467,040	1,014,064	452,976	372,603	23,962	12,351	44,060
Alabama	25,144	17,514	7,630	6,913	–	663	54
Alaska	1,741	1,503	238	225	–	–	13
Arizona	10,680	9,278	1,402	1,158	–	160	84
Arkansas	11,322	10,545	777	554	–	143	80
California	113,882	89,381	24,501	16,659	–	70	7,772
Colorado	15,096	11,859	3,236	2,510	–	–	726
Connecticut	19,232	12,248	6,984	5,304	1,320	–	360
Delaware	4,417	2,372	2,045	1,135	550	–	360
District of Columbia	12,314	7,589	4,725	3,705	–	–	1,020
Florida	48,560	37,009	11,551	10,339	–	925	287
Georgia	33,296	22,352	10,944	10,198	–	320	426
Hawaii	4,711	3,216	1,495	419	241	292	543
Idaho	3,675	3,258	417	387	–	–	30
Illinois	79,912	57,706	22,206	18,234	2,089	1,237	646
Indiana	33,440	22,813	10,627	9,059	127	254	1,187
Iowa	20,117	17,137	2,980	2,689	–	186	105
Kansas	17,219	13,888	3,331	3,118	123	80	10
Kentucky	19,380	15,261	4,119	2,902	–	477	740
Louisiana	24,886	18,183	6,703	4,864	–	201	1,638
Maine	7,893	5,665	2,228	2,066	162	–	–
Maryland	27,256	14,444	12,812	9,734	1,622	377	1,079
Massachusetts	52,505	28,243	24,262	15,887	5,810	178	2,387
Michigan	58,095	41,492	16,603	15,057	560	–	986
Minnesota	29,075	23,391	5,684	4,654	–	123	907
Mississippi	17,407	11,922	5,485	5,223	25	211	26
Missouri	36,814	27,074	9,740	7,438	–	459	1,843
Montana	4,881	4,371	510	–	228	282	–
Nebraska	11,665	10,150	1,515	1,503	–	–	12
Nevada	3,005	2,430	575	520	–	–	55
New Hampshire	5,496	3,595	1,901	1,901	–	–	–
New Jersey	49,576	29,535	20,041	18,470	421	197	953
New Mexico	6,121	4,773	1,348	850	315	–	183
New York	162,222	91,144	71,078	60,091	4,611	345	6,031
North Carolina	33,402	22,279	11,123	9,345	181	888	709
North Dakota	5,314	4,385	929	929	–	–	–
Ohio	71,270	49,443	21,827	19,470	711	508	1,338
Oklahoma	17,372	13,149	4,223	3,671	231	165	156
Oregon	12,159	9,274	2,885	2,786	–	–	99
Pennsylvania	100,828	60,841	39,987	29,967	2,576	849	6,595
Rhode Island	8,015	5,176	2,839	2,172	477	–	190
South Carolina	19,230	12,454	6,776	6,258	11	393	114
South Dakota	6,381	4,516	1,865	1,783	–	–	82
Tennessee	29,908	21,583	8,325	6,779	650	643	253
Texas	75,278	58,719	16,559	13,930	–	891	1,738
Utah	4,913	4,342	571	328	198	–	45
Vermont	3,553	2,356	1,197	1,197	–	–	–
Virginia	33,958	22,567	11,391	10,390	–	322	679
Washington	18,331	14,212	4,119	3,733	–	238	148
West Virginia	16,204	11,152	5,052	4,242	508	260	42
Wisconsin	37,047	24,345	12,702	10,944	215	214	1,329
Wyoming	2,843	1,930	913	913	–	–	–

[1] Preliminary data.

[2] Includes eye, ear, nose, and throat hospitals; epileptic hospitals; alcoholism hospitals; narcotic hospitals; maternity hospitals; orthopedic hospitals; physical rehabilitation hospitals; and other hospitals.

TABLE A-3

Number of Hospitals by Size: 1972

Bed size	Total hospitals[1]	General medical and surgical	Specialty				
			Total	Psychiatric	Chronic disease	Tuberculosis	Other[2]
Total	7,481	6,491	990	497	78	75	340
6-24	571	483	88	13	2	3	70
25-49	1,561	1,441	120	48	4	5	63
50-74	1,036	913	123	42	10	13	58
75-99	766	676	90	39	3	11	37
100-199	1,506	1,335	171	72	21	19	59
200-299	753	674	79	33	15	12	19
300-499	707	633	74	38	12	11	13
500-999	378	288	90	67	6	1	16
1,000 beds or more ..	203	48	155	145	5	—	5

[1] Preliminary data.

[2] Includes eye, ear, nose, and throat hospitals; epileptic hospitals; alcoholism hospitals; narcotic hospitals; maternity hospitals; orthopedic hospitals; physical rehabilitation hospitals; and other hospitals.

TABLE A-4

Ownership of Hospitals: 1972

Ownership	Total Hospitals[1]	General Medical and Surgical	Specialty				
			Total	Psychiatric	Chronic disease	Tuberculosis	Other[2]
	Number of Hospitals						
Total Hospitals	7,481	6,491	990	497	78	75	340
Government	2,770	2,248	522	328	49	70	75
Federal	405	369	36	29	-	-	7
State-local	2,365	1,879	486	299	49	70	68
Proprietary	986	811	175	88	8	-	79
Non-profit	3,725	3,432	293	81	21	5	186
Church	854	797	57	14	5	1	37
Other	2,871	2,635	236	67	16	4	149
	Number of Beds						
Total	1,467,040	1,014,064	452,976	372,603	23,962	12,351	44,060
Government	734,674	322,479	412,195	357,916	19,900	12,011	22,368
Federal	142,673	108,409	34,264	32,093	-	-	2,171
State-local	592,001	214,070	377,931	325,823	19,900	12,011	20,197
Proprietary	71,449	60,619	10,533	6,959	573	-	3,001
Non-profit	660,917	630,669	30,248	7,728	3,489	340	18,691
Church	190,353	185,763	4,590	1,742	792	65	1,991
Other	470,564	444,906	25,658	5,986	2,697	275	16,700

[1] Preliminary data.

[2] Includes eye, ear, nose, and throat hospitals; epileptic hospitals; alcoholism hospitals; narcotic hospitals; maternity hospitals; orthopedic hospitals; physical rehabilitation hospitals; and other hospitals.

TABLE A-5

Nursing Homes by Type and State: 1971

State	Total homes	Nursing care	Personal care homes		Domiciliary care
			With nursing	Without nursing	
United States	22,004	12,871	3,568	5,369	196
Alabama	192	178	11	2	1
Alaska	8	7	1	–	–
Arizona	82	65	9	7	1
Arkansas	218	201	15	2	–
California	4,277	1,373	462	2,333	109
Colorado	212	166	26	19	1
Connecticut	380	246	36	88	10
Delaware	34	27	5	2	–
District of Columbia	73	34	27	12	–
Florida	373	290	41	38	4
Georgia	283	247	25	10	1
Hawaii	132	27	35	70	–
Idaho	64	53	5	6	–
Illinois	1,046	574	238	228	6
Indiana	522	403	72	46	1
Iowa	747	437	146	162	2
Kansas	480	247	174	59	–
Kentucky	344	139	144	61	–
Louisiana	212	193	13	6	–
Maine	288	144	44	95	5
Maryland	195	157	28	8	2
Massachusetts	960	643	170	146	1
Michigan	562	419	72	70	1
Minnesota	593	380	95	118	–
Mississippi	134	108	16	10	–
Missouri	494	355	94	43	2
Montana	103	61	27	13	2
Nebraska	253	150	73	30	–
Nevada	43	21	1	19	2
New Hampshire	140	97	28	13	2
New Jersey	548	279	64	203	2
New Mexico	60	35	8	14	3
New York	1,096	589	178	319	10
North Carolina	843	148	285	404	6
North Dakota	109	50	28	31	–
Ohio	1,191	940	158	92	1
Oklahoma	411	369	23	18	1
Oregon	311	197	43	68	3
Pennsylvania	753	547	143	63	–
Rhode Island	185	91	30	63	1
South Carolina	118	99	8	11	–
South Dakota	153	85	37	30	1
Tennessee	234	194	20	19	1
Texas	937	799	92	43	3
Utah	142	78	55	9	–
Vermont	101	55	17	28	1
Virginia	335	154	62	115	4
Washington	385	287	60	36	2
West Virginia	124	57	23	42	2
Wisconsin	490	356	98	34	2
Wyoming	34	20	3	11	–

Source: Unpublished data from the National Center for Health Statistics Master Facility Censes.

TABLE A-6

Nursing Home Beds by Type and State: 1971

State	Total beds	Nursing care	Personal care homes		Domiciliary care
			With nursing	Without nursing	
United States	1,201,598	917,707	192,347	88,317	3,227
Alabama	13,439	12,546	859	28	6
Alaska	653	478	175	–	–
Arizona	5,220	4,554	375	271	20
Arkansas	15,053	14,118	728	207	–
California	154,982	104,297	17,473	23,401	811
Colorado	16,449	13,511	2,397	534	7
Connecticut	21,917	18,474	1,628	1,682	133
Delaware	1,878	1,302	541	35	–
District of Columbia	2,774	2,038	583	153	–
Florida	35,871	29,104	4,090	1,698	979
Georgia	22,809	20,469	2,098	212	30
Hawaii	2,291	1,641	286	364	–
Idaho	3,913	3,569	179	165	–
Illinois	66,871	44,438	15,236	6,994	203
Indiana	32,538	25,658	5,431	1,426	23
Iowa	33,785	22,347	7,967	3,460	11
Kansas	21,868	14,166	7,043	659	–
Kentucky	18,622	9,051	7,365	2,206	–
Louisiana	14,610	13,732	665	213	–
Maine	7,391	5,400	876	1,089	26
Maryland	14,689	13,008	1,620	53	8
Massachusetts	49,687	39,309	7,501	2,861	16
Michigan	43,284	36,834	4,655	1,735	60
Minnesota	41,143	31,608	7,146	2,389	–
Mississippi	7,115	6,305	593	217	–
Missouri	32,022	25,162	5,818	1,027	15
Montana	4,459	3,368	894	145	52
Nebraska	15,102	10,775	3,820	507	–
Nevada	1,441	1,033	50	267	91
New Hampshire	5,460	4,591	627	219	23
New Jersey	30,775	22,454	3,456	4,821	44
New Mexico	3,299	2,[illegible]9	794	150	96
New York	81,112	57,906	14,396	8,607	203
North Carolina	19,217	8,326	7,115	3,749	27
North Dakota	6,194	3,828	1,520	846	–
Ohio	59,524	46,923	10,551	2,046	4
Oklahoma	26,903	24,451	1,891	552	9
Oregon	17,171	12,880	2,984	1,282	25
Pennsylvania	57,691	43,451	12,674	1,566	–
Rhode Island	6,511	4,798	800	901	12
South Carolina	7,476	6,455	805	216	–
South Dakota	7,042	4,917	1,747	372	6
Tennessee	14,317	11,050	1,570	1,687	10
Texas	70,812	61,505	7,543	1,677	87
Utah	4,769	3,133	1,442	194	–
Vermont	3,010	2,263	317	413	17
Virginia	15,678	10,326	3,115	2,186	51
Washington	28,564	23,060	4,123	1,305	76
West Virginia	3,852	2,504	647	689	12
Wisconsin	37,648	30,973	5,965	676	34
Wyoming	1,697	1,359	173	165	–

Source: Unpublished data from the National Center for Health Statistics Master Facility Census.

TABLE A-7

Number of Nursing Homes and Number of Beds: 1971

Type of Nursing Care	Number of Homes	Number of beds
Total	22,004	1,201,598
Nursing care	12,871	917,707
Personal care homes with nursing	3,568	192,347
Domiciliary care	196	3,227

Table A-8

Number of Nursing Homes by Size: 1971

Home size	Total homes	Nursing care	Personal care homes		Domiciliary care
			With nursing	Without nursing	
	Number				
Total	22,004	12,871	3,568	5,369	196
Less than 25 beds	8,266	2,035	1,561	4,497	173
25-49	4,784	3,351	827	596	10
50-74	3,475	2,876	425	167	7
75-99	2,046	1,752	245	48	1
100-199	2,825	2,422	351	51	1
200-299	422	303	108	7	4
300-499	141	100	40	1	–
500 beds or more	45	32	11	2	–

TABLE A-9

Ownership of Nursing Homes: 1971

Ownership	Total homes	Nursing care	Personal care homes		Domiciliary care
			With nursing	Without nursing	
	Number of homes				
Total homes	22,004	12,871	3,568	5,369	196
Government	1,368	872	223	265	8
Federal	67	18	18	28	3
State-local	1,301	854	205	237	5
Proprietary	17,049	9,963	2,317	4,611	158
Nonprofit	3,587	2,036	1,028	493	30
Church	912	500	307	99	6
Other	2,675	1,536	721	394	24
	Number of beds				
Total beds	[1] 1,201,598	917,707	192,347	88,317	3,227
Government	122,972	91,708	23,658	7,466	140
Federal	5,764	1,557	2,383	1,733	91
State-local	117,208	90,151	21,275	5,733	49
Proprietary	803,696	663,031	73,442	65,845	1,378
Nonprofit	274,930	162,968	95,247	15,006	1,709
Church	81,336	43,655	33,215	3,713	753
Other	193,594	119,313	62,032	11,293	956

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